

# Service Manual

**Pioneer**



ORDER NO.  
ARP3073

DIGITAL CATV CONVERTER

# BD-V1100 BD-V1110

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	BD-V1100	BD-V1110		
KUXJ/1	○	—	AC120V	
KU/1	○	—	AC120V	
KUXJ	—	○	AC120V	

- Refer to the “Service Know-how (SKB54005)” for the details about the 6. ADJUSTMENT and 7.1.1 TROUBLESHOOTING.
- Refer to 7.3 (page 68) about the exterior distinction between /KU , /KUXJ , /KUXJ/1 and KU/1 models of BD-V1100.

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# 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



## WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65



## NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

## REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

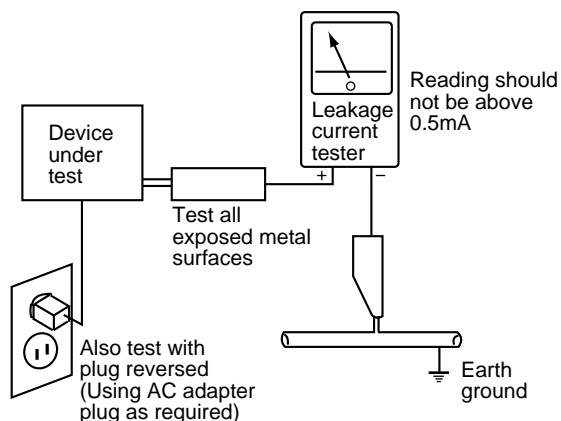
## (FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

#### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  $\Delta$  on the schematics and on the parts list in this Service Manual.

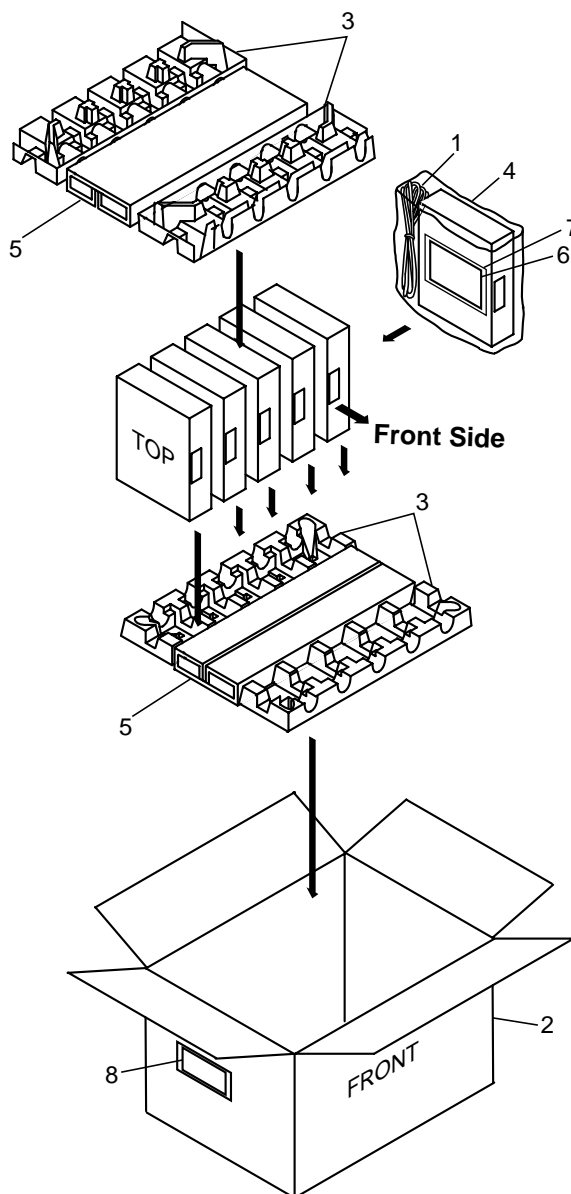
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

## 2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.  
 ● The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
 ● Screws adjacent to  $\blacktriangledown$  mark on the product are used for disassembly.

### 2.1 PACKING



#### (1) PACKING PARTS LIST

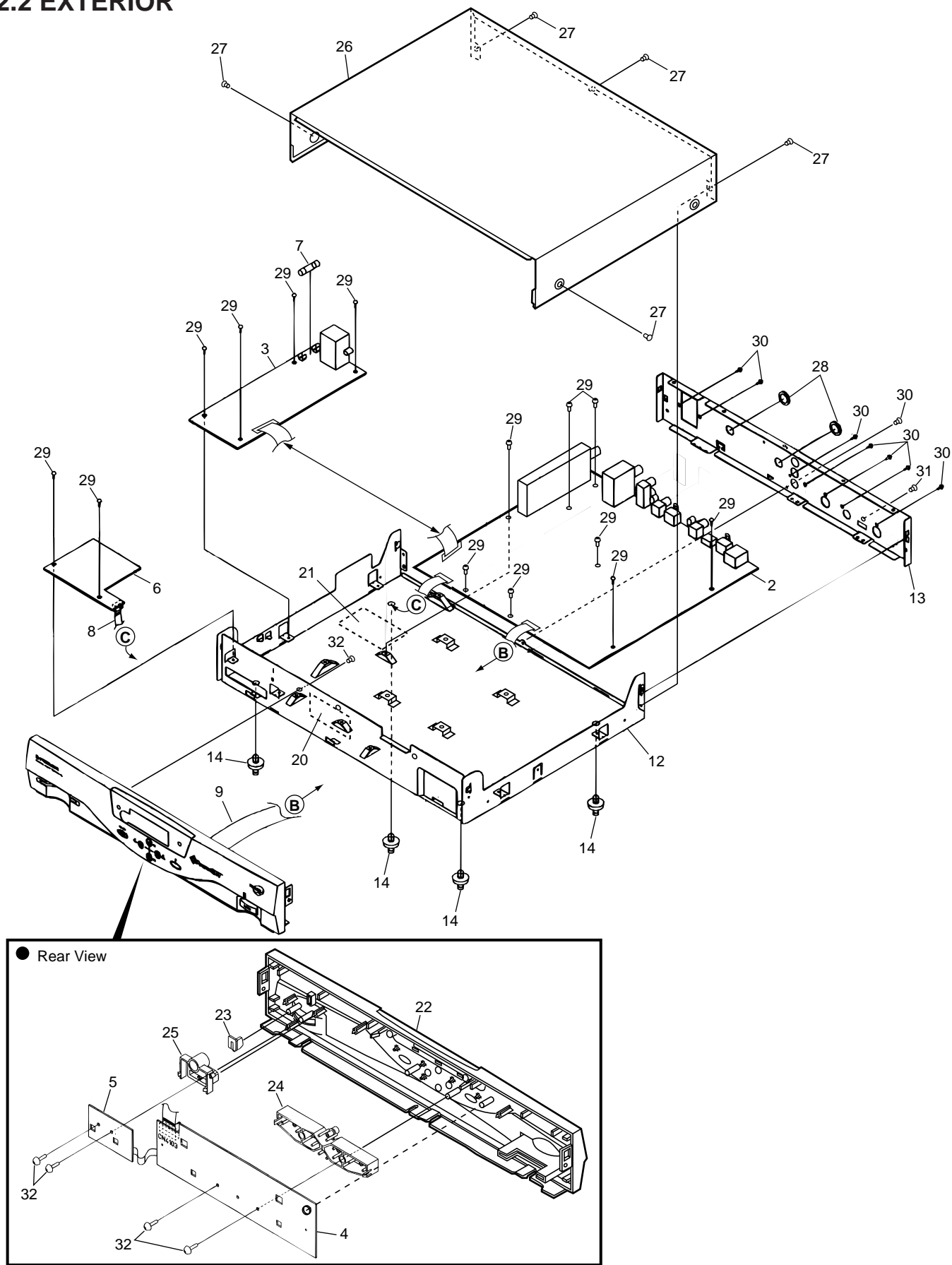
Mark	No.	Description	Part No.
$\Delta$	1	AC Power Cord	See Contrast table(2)
	2	Packing Case	See Contrast table(2)
	3	Pulp Mold	BHX1021
	4	Packing Sheet	BHG1063
	5	Packing Spacer	BHA1150
	6	Operating Instructions (English)	BRB1057
NSP	7	Literature Bag	AHG-117
NSP	8	Bar-code Label	BAL1332

#### (2) CONTRAST TABLE

BD-V1100/KUXJ/1, /KU/1 and BD-V1110/KUXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
$\Delta$	1	AC Power Cord	ADG7022	ADG7021	ADG7022	
	2	Packing Case	BHD1481	BHD1483	BHD1482	

2.2 EXTERIOR



**(1) EXTERIOR PARTS LIST**

Mark	No.	Description	Part No.
	1	.....	
	2	MAIN Assy	BWX1141
△	3	SWITCHING POWER SUPPLY Assy	BXF1136
	4	FRONT PANEL Assy (PCB)	See Contrast table(2)
	5	POWER SWITCH Assy	See Contrast table(2)
	6	CARD Assy	See Contrast table(2)
△	7	FUSE (F1101 : 4A)	BEK1010
	8	10P FFC (J9001) (CARD CN4202 ↔ MAIN CN1203)	BDD1040
	9	20P FFC (J9002) (FRONT PANEL CN4103 ↔ MAIN CN2102)	BDD1041
	10	.....	
	11	.....	
	12	Chassis	BNA1155
	13	Rear Panel	See Contrast table(2)
	14	Leg Assy	BEC1015
	15	.....	
	16	.....	
	17	.....	
	18	.....	
	19	.....	
	20	Proposition 65 Label	BAX1249
	21	UPC Label	See Contrast table(2)
	22	Front Panel Assy	See Contrast table(2)
	23	Indicator Lens	BAK1139
	24	STATION Knob	BAD1119
	25	POWER SW Knob	BAD1120
	26	Bonnet	BNE1115
	27	Screw	BBA1062
	28	Nut	BBN1005
	29	Screw	BBZ30P060FMC
	30	Screw	BBZ30P080FZK
	31	Screw	BMZ20P040FZK
	32	Screw	BPZ26P080FMC

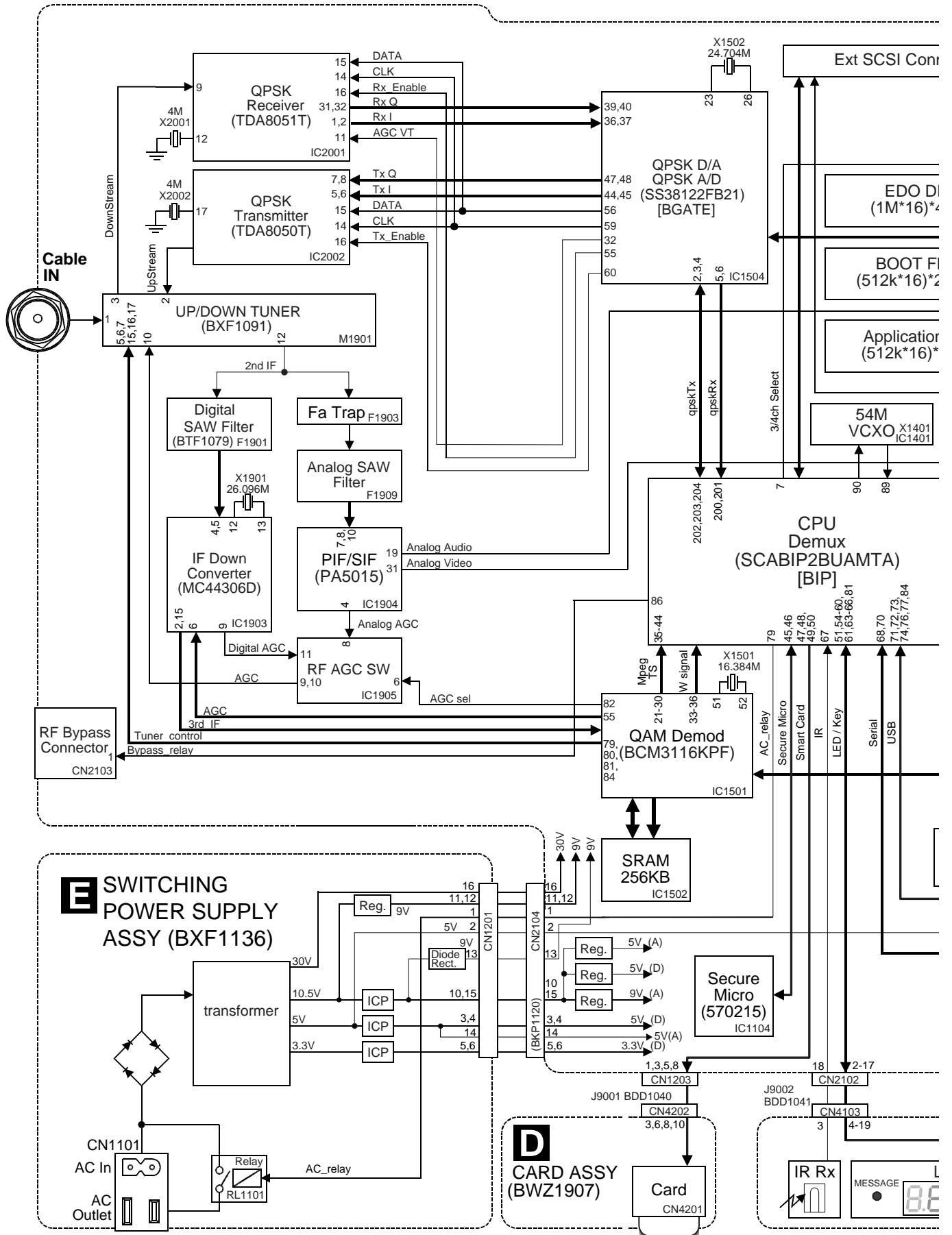
**(2) CONTRAST TABLE**

BD-V1100/KUXJ/1, /KU/1 and BD-V1110/KUXJ are constructed the same except for the following:

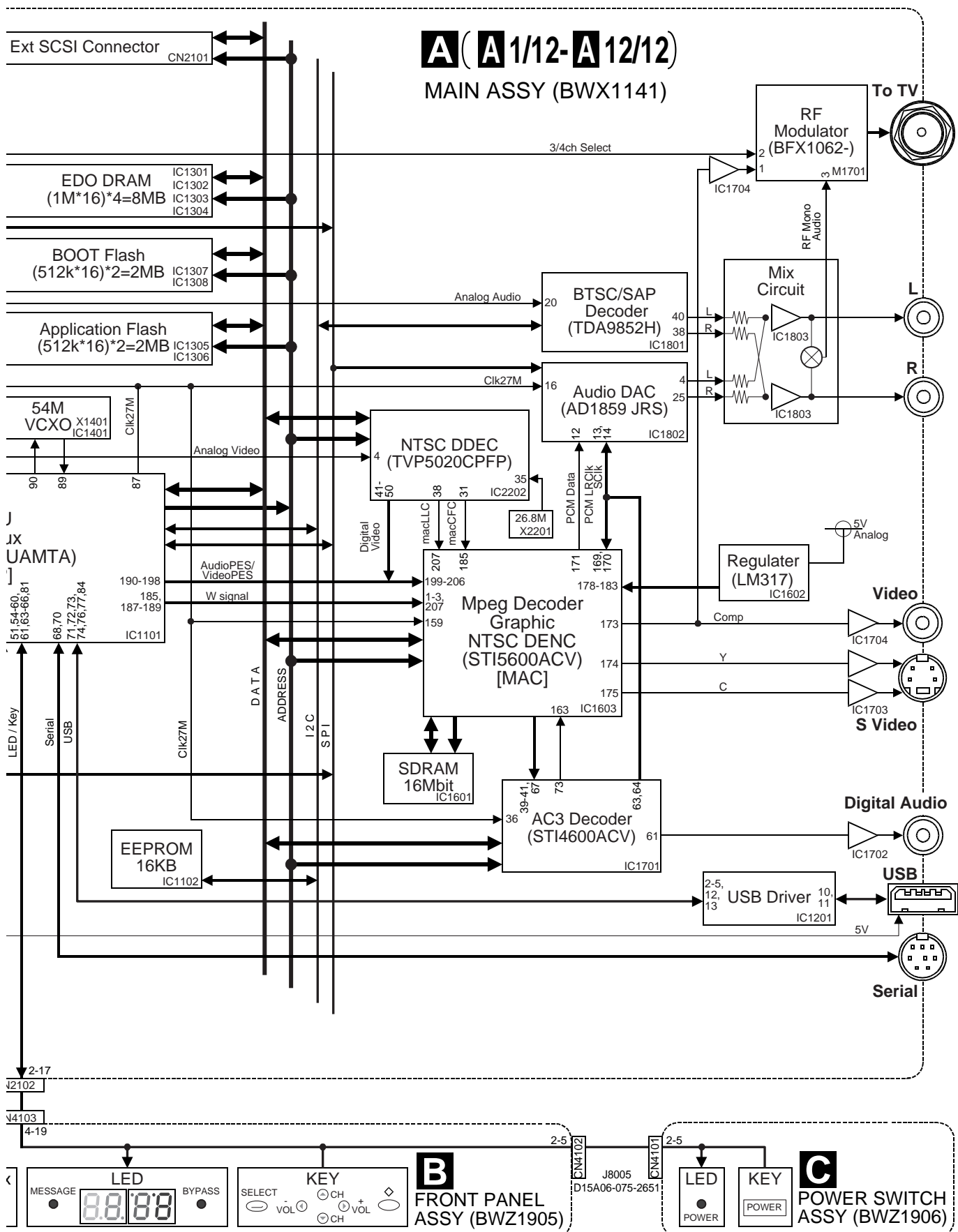
Mark	No.	Symbol and Description	Part No.			Remarks
			BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
NSP	4	FRONT PANEL ASSY	BWZ1905	BWZ1910	BWZ1905	
	5	POWER SWITCH ASSY	BWZ1906	BWZ1911	BWZ1906	
	6	CARD ASSY	BWZ1907	BWZ1912	BWZ1907	
	13	Rear Panel	BNC1164	BNC1164	BNC1165	
	21	UPC Label	BAX1277	BAX1278	BAX1279	
	22	Front Panel Assy	BMB1116	BMB1116	BMB1117	
		Name Label	Not used	BAL1399	Not used	

### 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

#### 3.1 BLOCK DIAGRAM



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".







B

C

D

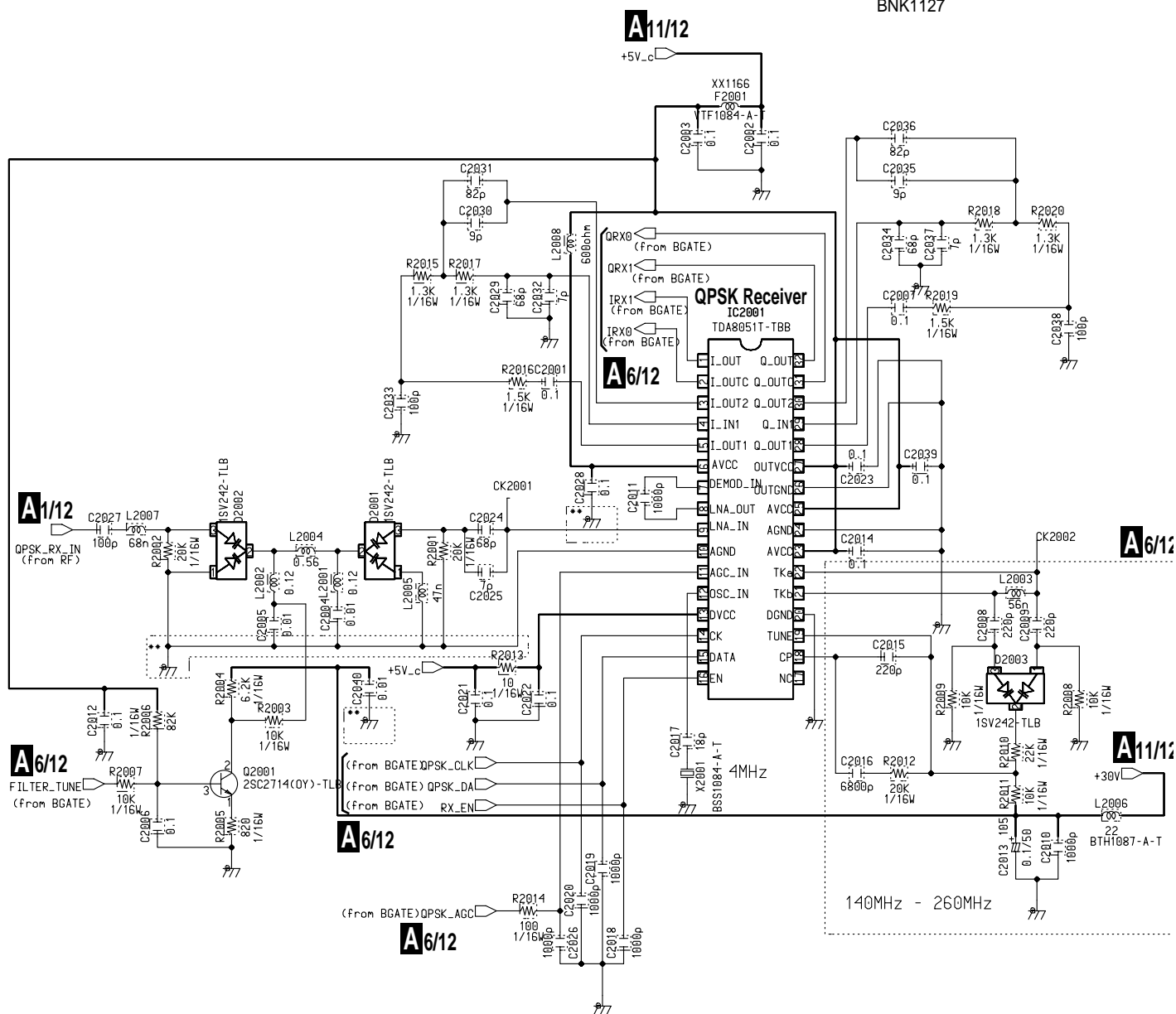
### 3.3 MAIN ASSY (2/12)

**A 2/12** MAIN ASSY (2/12) (BWX1141)

- QPSK, Tx, Rx BLOCK

QPSK Rx

SHEALD CASE  
BNK1127



♦♦ These grounds should be made common

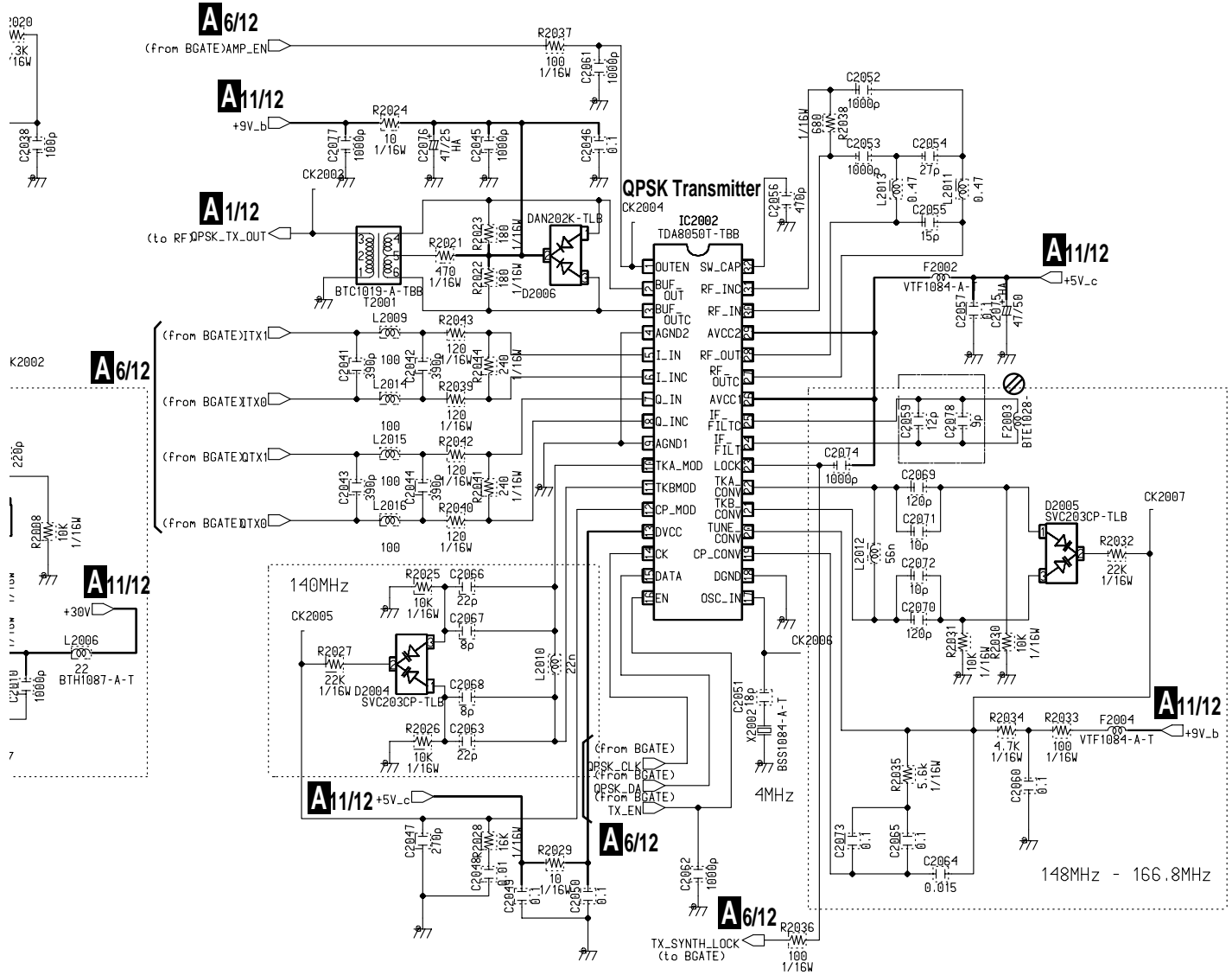
Be sure to use parts of inditical designation at  mark.

## RESISTORS

Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K; K $\Omega$ , M; M $\Omega$ .

## CAPACITORS

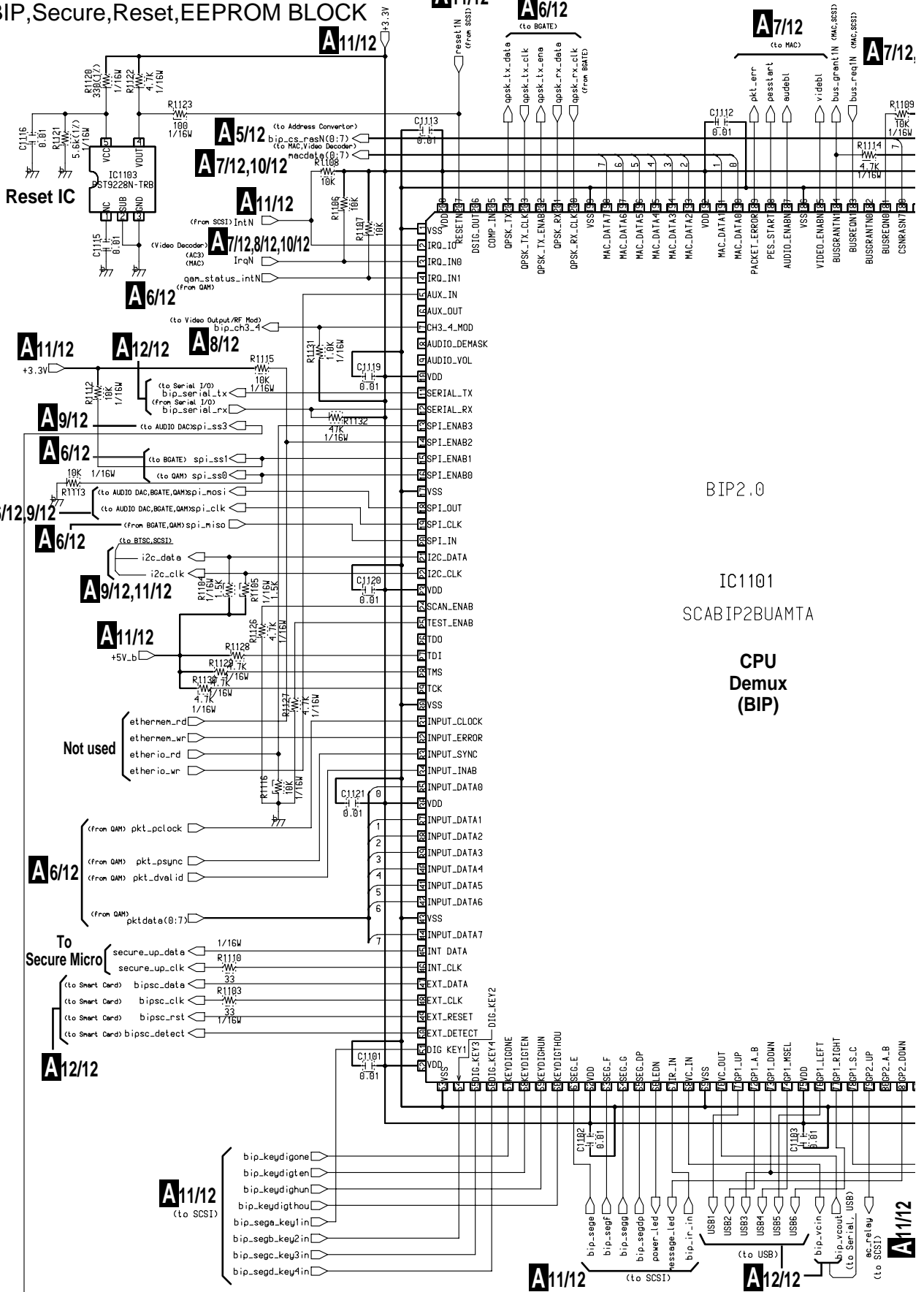
Indicated in Capacity( $\mu$ F)/VOLTAGE(V) unless otherwise noted.P;PF.  
Indication without voltage is 50V except electrolytic capacitor.

QPSK Tx SHEALD CASE  
BNK1126

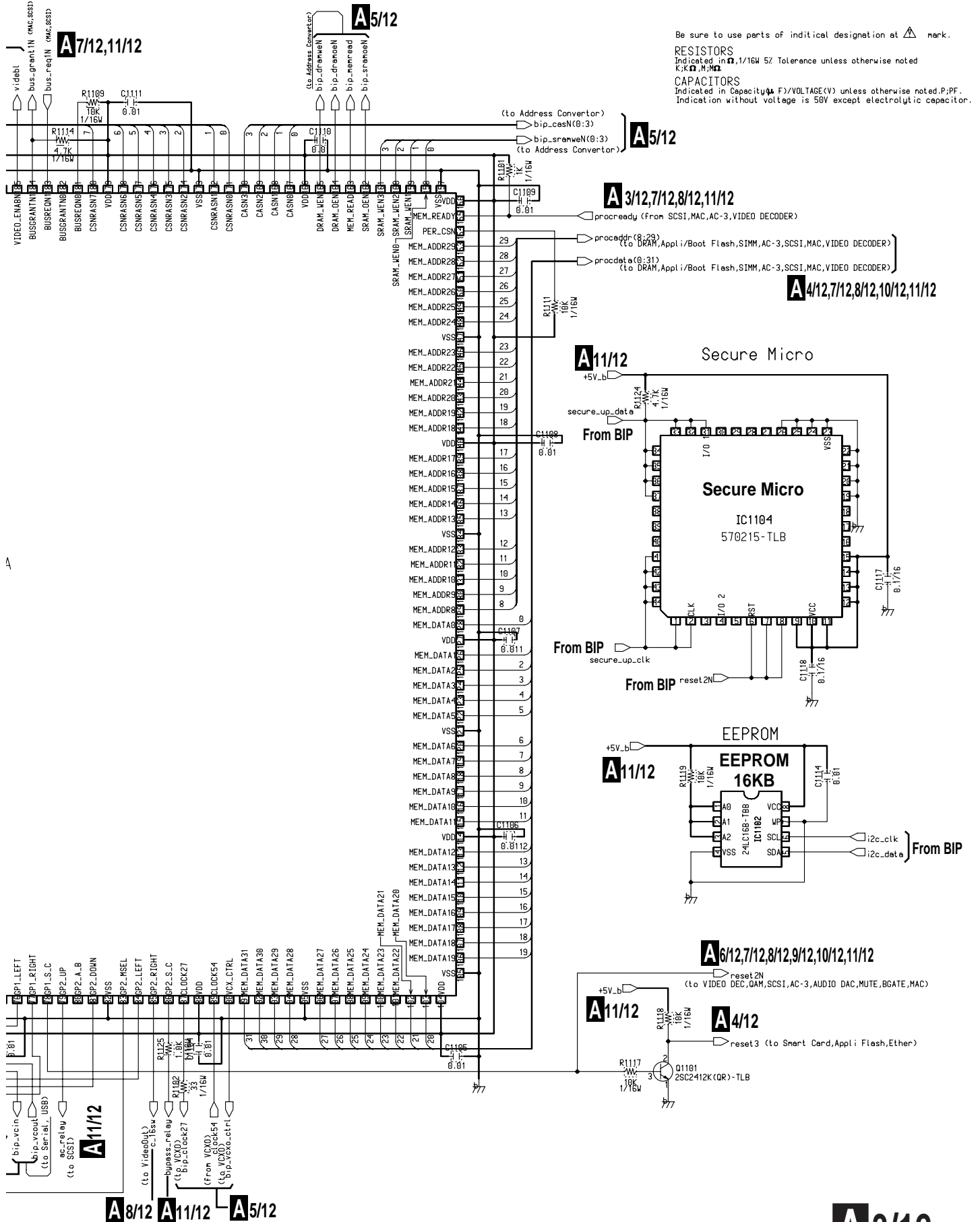
## 3.4 MAIN ASSY (3/12)

**A** 3/12 MAIN ASSY (3/12) (BWV1141)

- BIP, Secure, Reset, EEPROM BLOCK



A7/12



# BD-V1100, BD-V1110

## 3.5 MAIN ASSY (4/12)

### A 4/12 MAIN ASSY (4/12) (BWV1141)

#### • MEMORY BLOCK

A11/12 +5V\_b

A3/12 {  
procaddr(8:29)  
(from BIP)  
procdat(0:31)  
(From BIP)

A

B

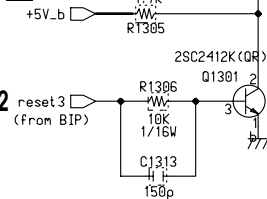
Not used  
(From Address Converter)  
procdrwnN  
(From Address Converter)  
mainresN  
(From Address Converter)  
procdramN  
(From Address Converter)

A5/12

SIMM Module  
Not used

C

A11/12



A3/12

reset3  
(From BIP)

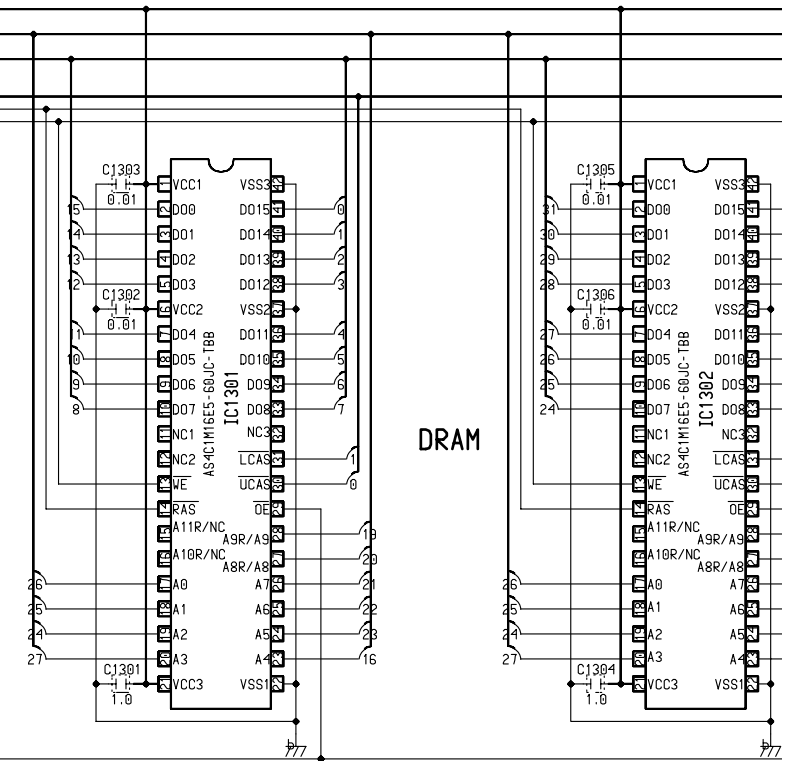
Be sure to use parts of inditical designation at  $\Delta$  mark.

#### RESISTORS

Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K;  $\Omega$ ; M;  $\mu$

#### CAPACITORS

Indicated in Capacity  $\mu$ F / VOLTAGE(V) unless otherwise noted. P; PF.  
Indication without voltage is 50V except electrolytic capacitor.



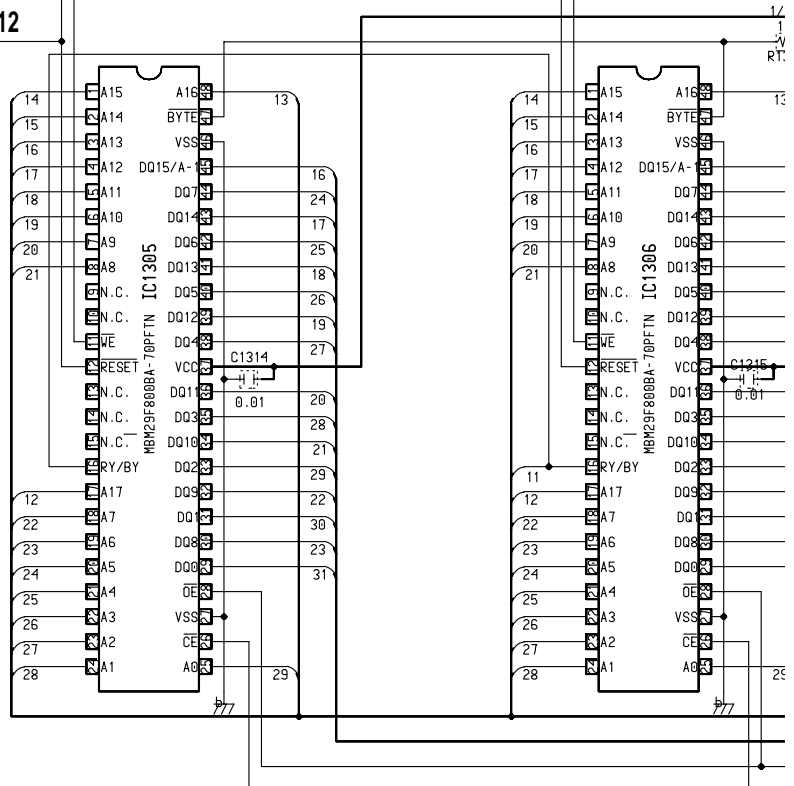
DRAM

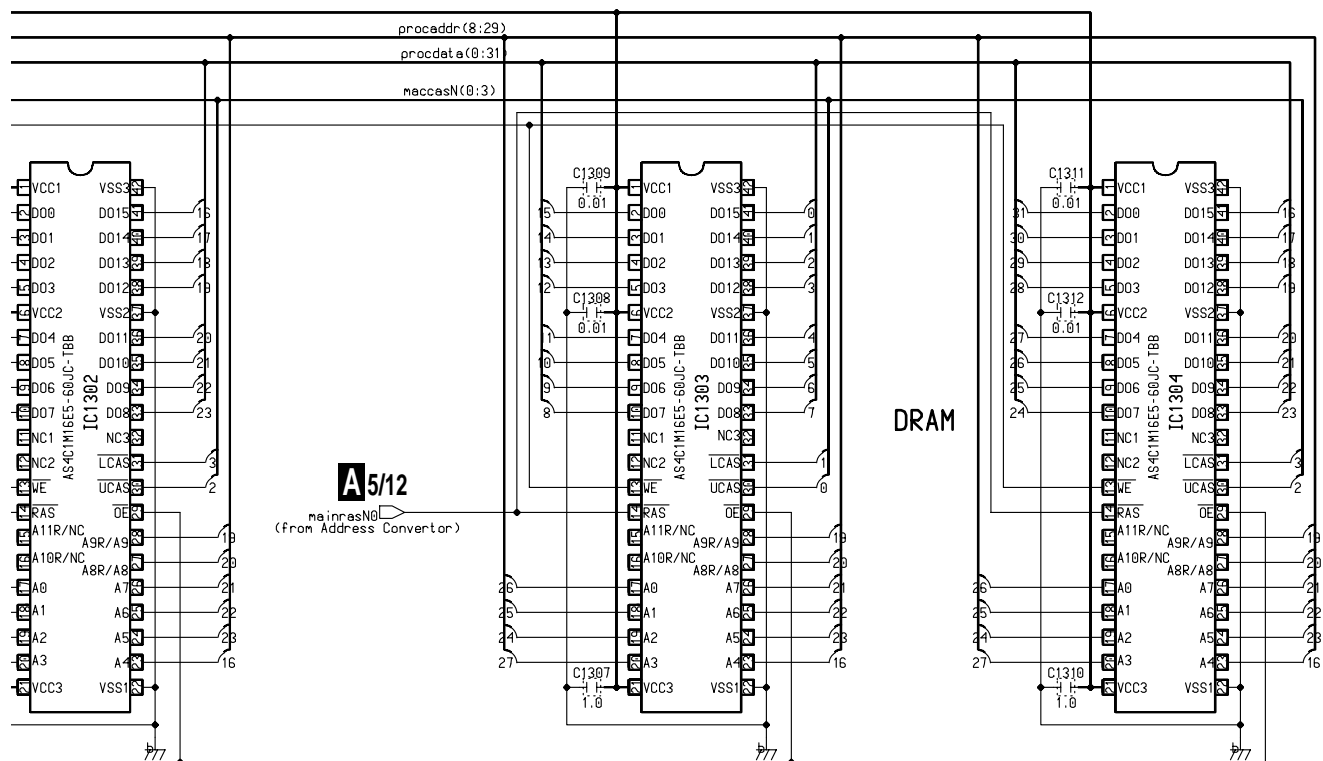
### Application Flash

A11/12

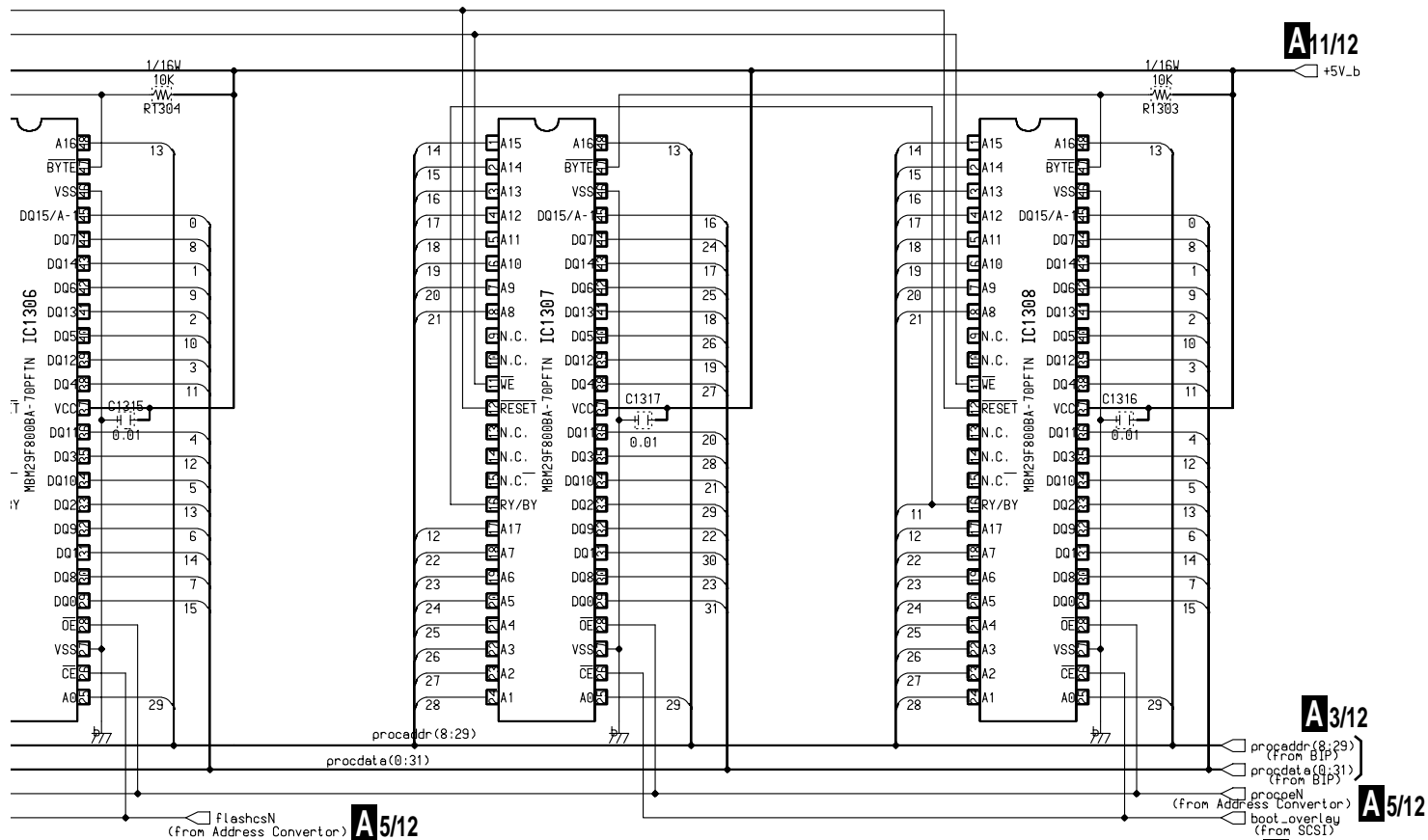
flashvpp\_rstN  
(From SCS1)  
procrwN  
(From Address Converter)

A5/12





## Boot Flash



A 4/12

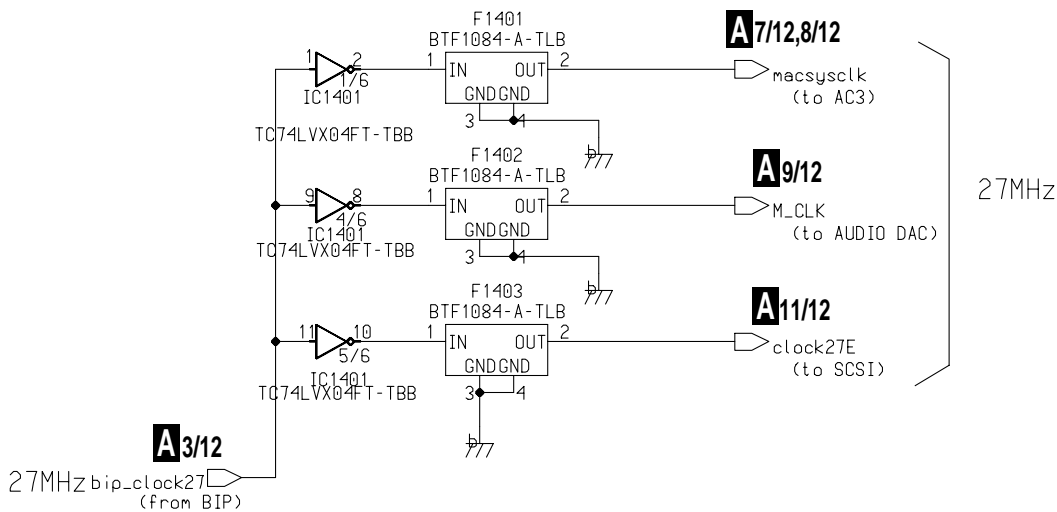
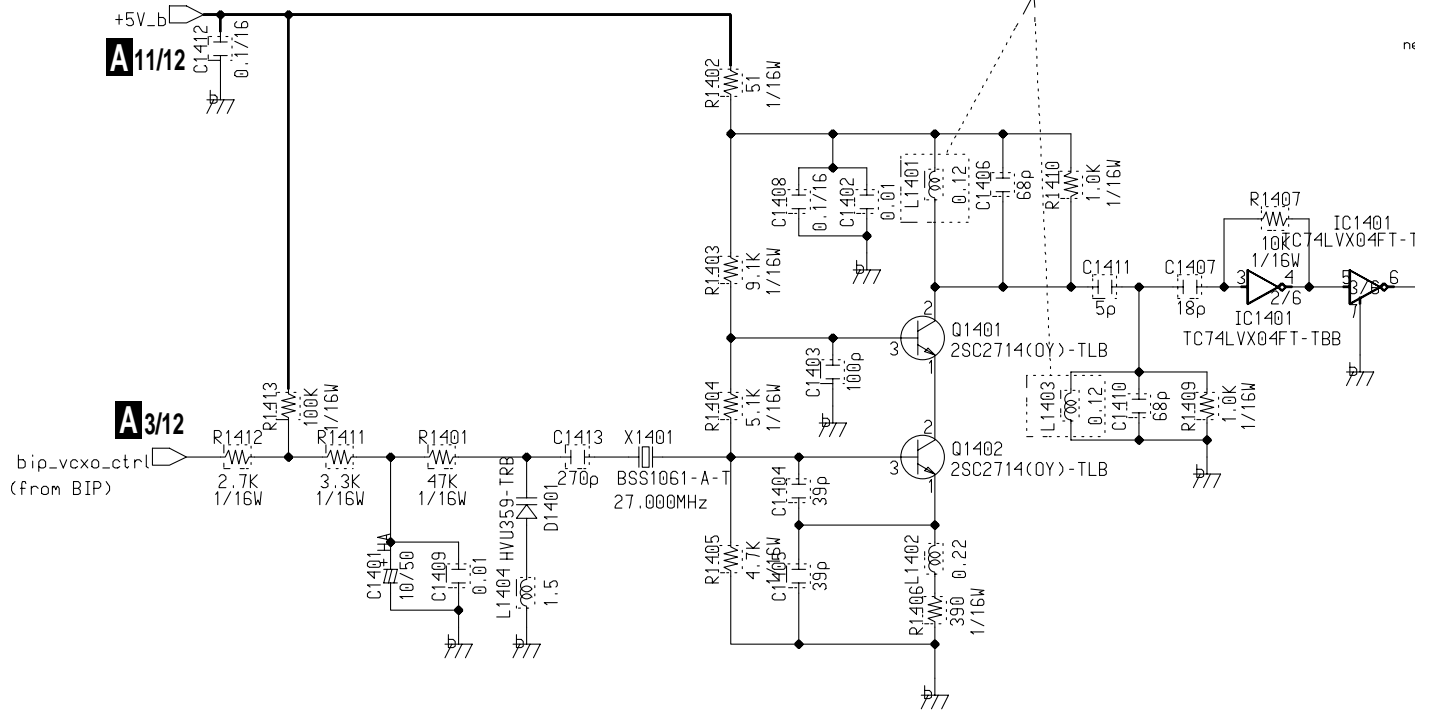
## 3.6 MAIN ASSY (5/12)

**A** 5/12 MAIN ASSY (5/12) (BW1141)

- 54MHz VCXO, Address Converter BLOCK

## 54MHz VCXO Block

Must use TDK Coil



Be sure to use parts of inditical designation at

## RESISTORS

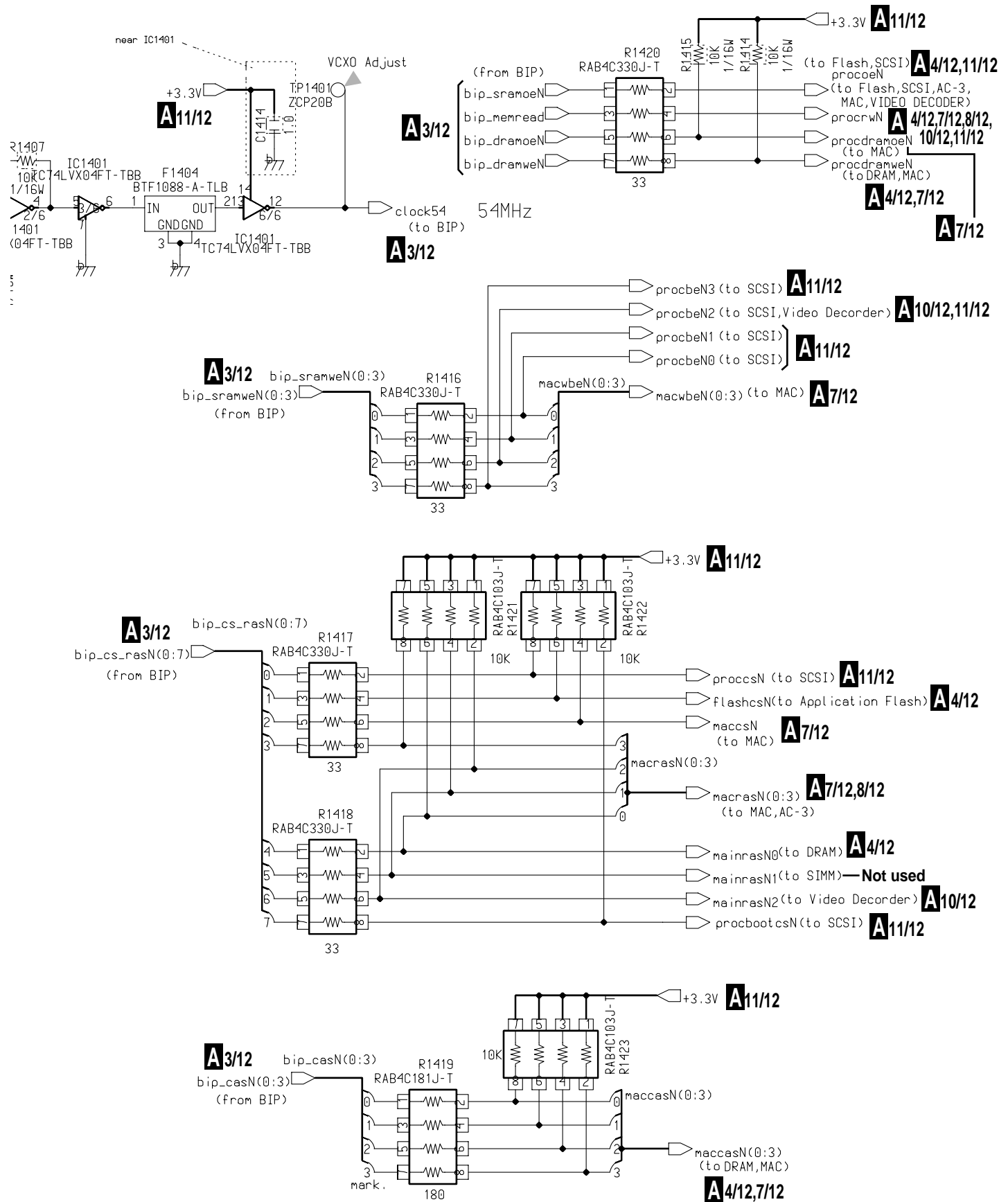
Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K; K $\Omega$ ; M; M $\Omega$ 

## CAPACITORS

Indicated in Capacity  $\mu$ , F/VOLTAGE(V) unless otherwise noted. P; PF.  
Indication without voltage is 50V except electrolytic capacitor.



## Address Converter Block

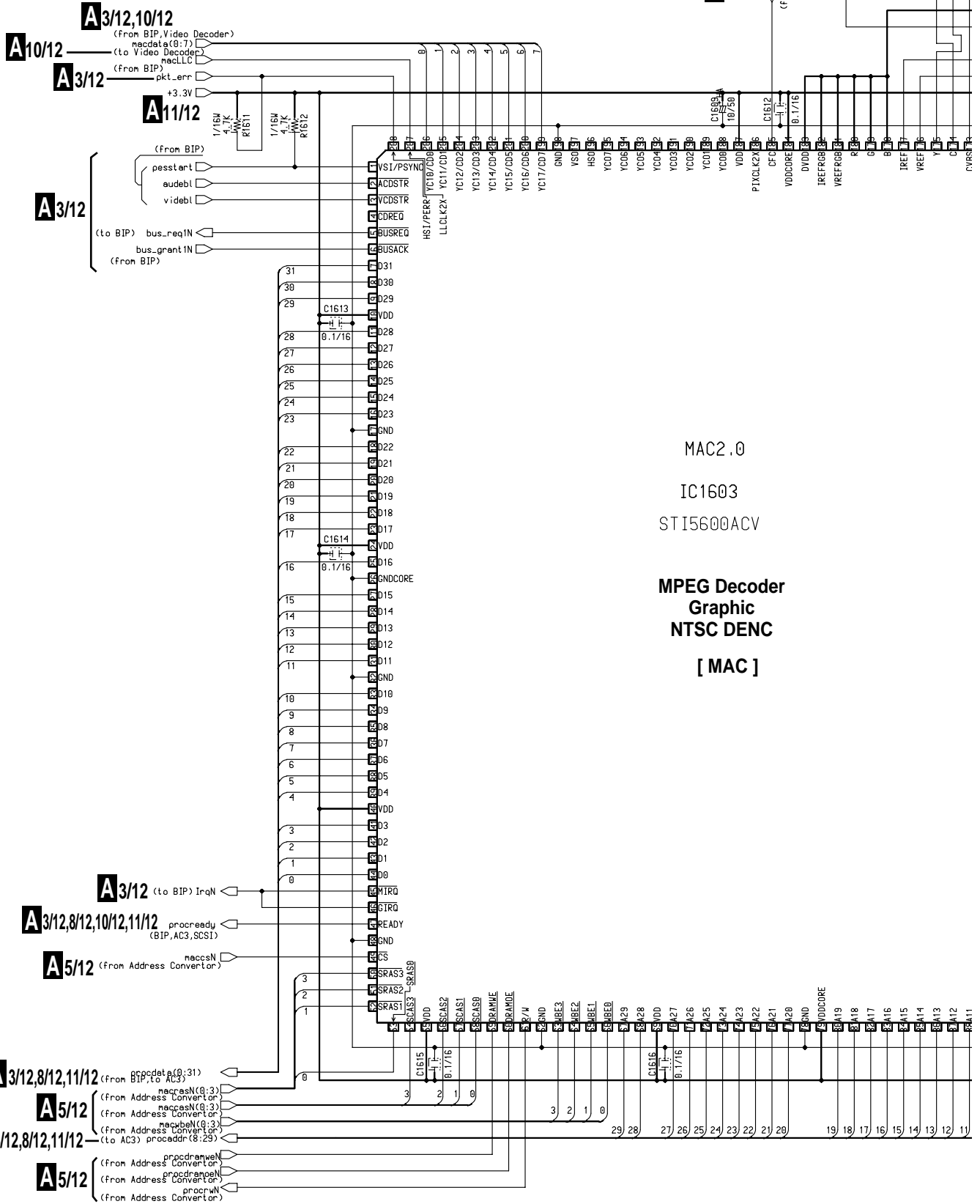


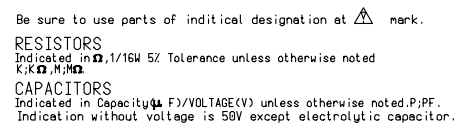




# 3.8 MAIN ASSY (7/12)

## A7/12 MAIN ASSY (7/12) (BWV1141) • MAC BLOCK



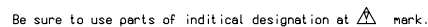












## RESISTORS

Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted

CAPACITORS

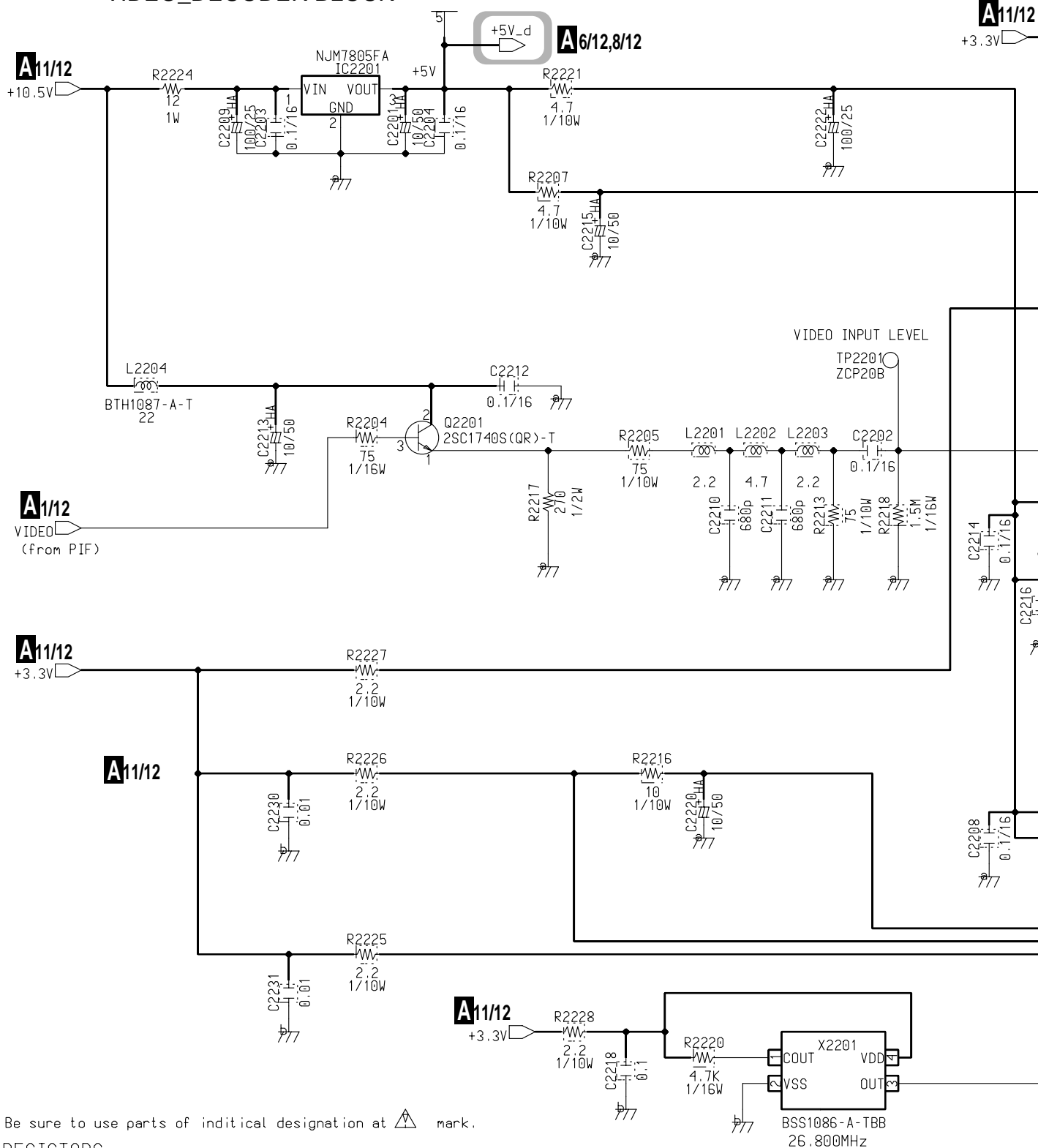
Indicated in Capacity( $\mu$ F)/VOLTAGE(V) unless otherwise noted. P; PF.  
Indication without voltage is 50V except electrolytic capacitor.



### 3.11 MAIN ASSY (10/12)

**A 10/12** MAIN ASSY (10/12) (BWX1141)

- VIDEO\_DECODER BLOCK



Be sure to use parts of inditical designation at  mark.


## RESISTORS

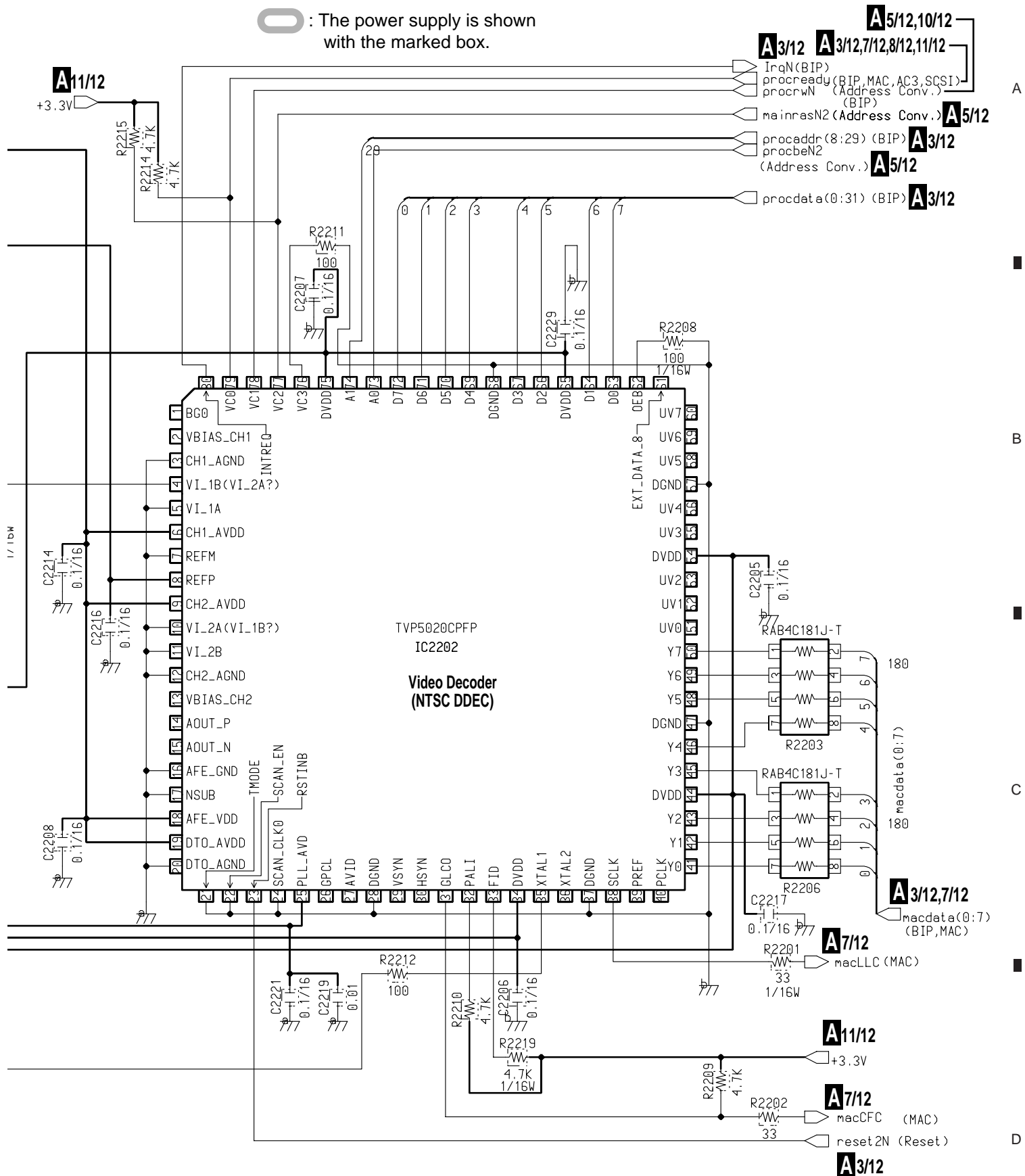
Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K; K $\Omega$ , M; M $\Omega$ .

## CAPACITORS

Indicated in Capacity( $\mu$ F)/VOLTAGE(V) unless otherwise noted.P;PF.  
Indication without voltage is 50V except electrolytic capacitor.


Note : Resistors without indication are all 1/16w .

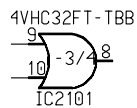
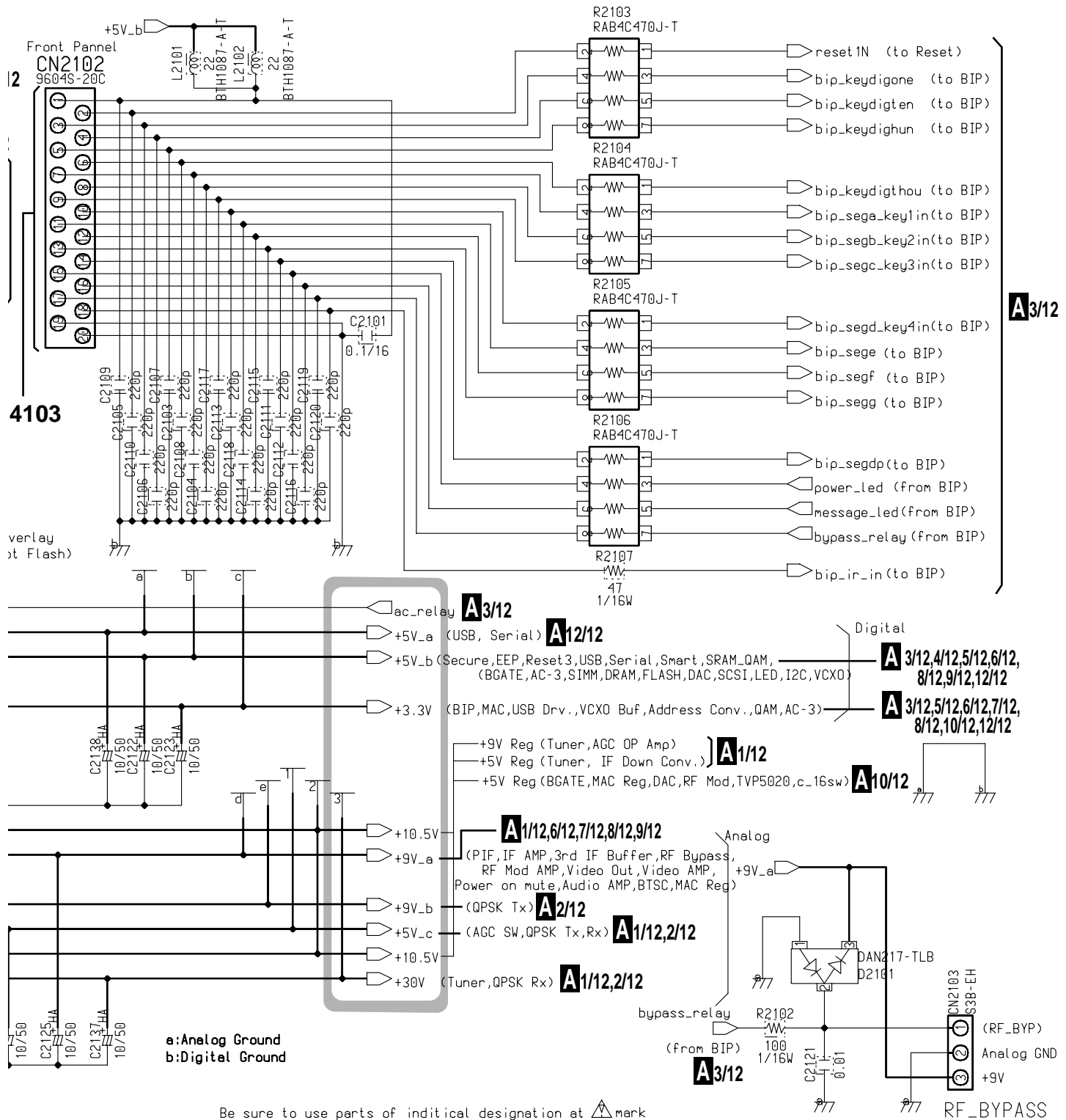
: The power supply is shown with the marked box.



**A10/12** 27



 : The power supply is shown with the marked box.



Be sure to use parts of inditical designation at **A** mark

#### RESISTORS

Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K;K $\Omega$ ,M;M $\Omega$ .

#### CAPACITORS

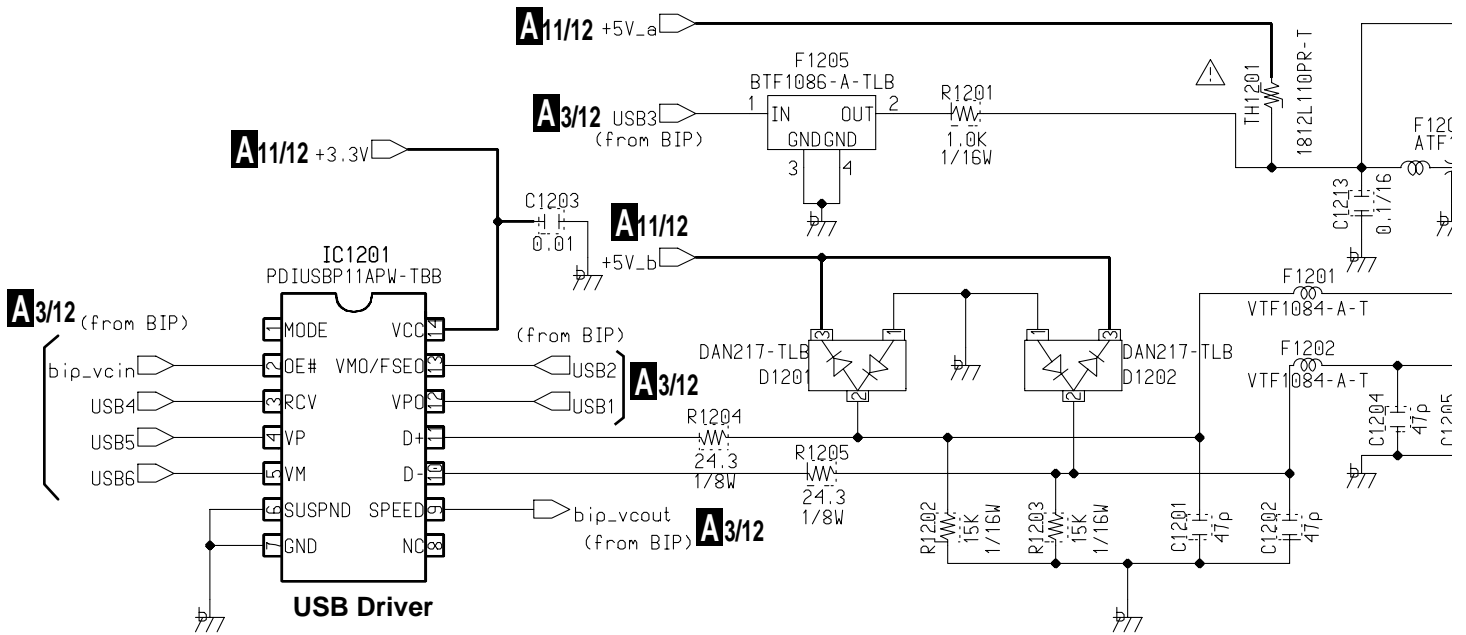
Indicated in Capacity  $\mu$ F)/VOLTAGE(V) unless otherwise noted.P;PF.  
Indication without voltage is 50V except electrolytic capacitor.

### 3.13 MAIN ASSY (12/12)

#### A 12/12 MAIN ASSY (12/12) (BWV1141)

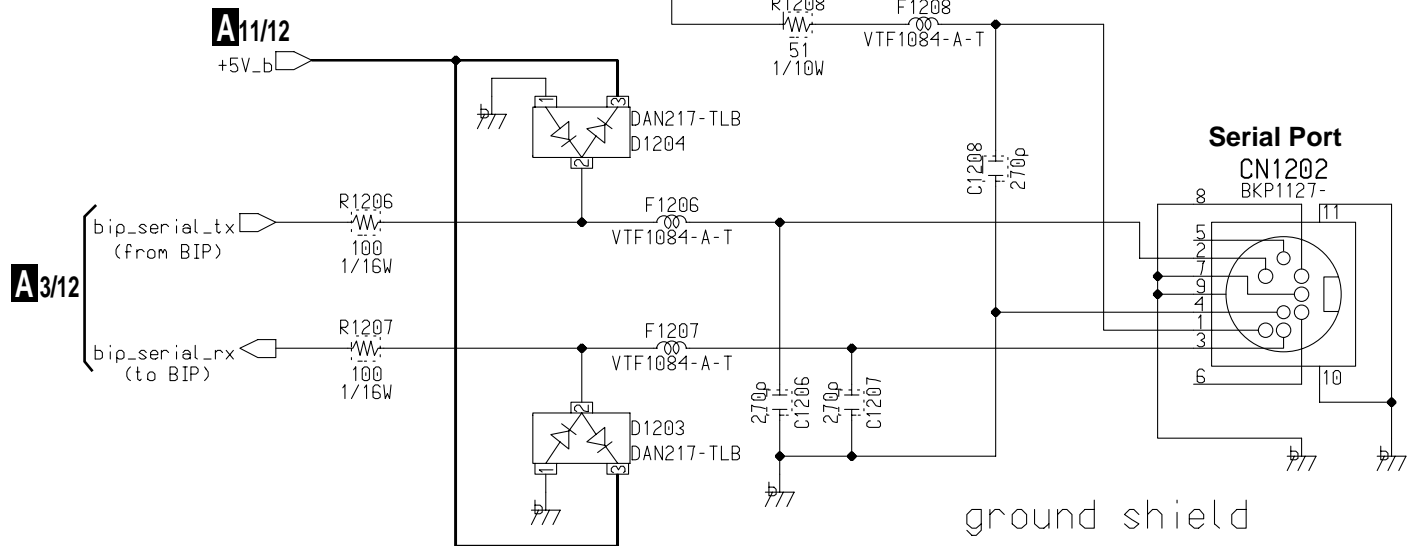
- USB, Serial, Smart Card BLOCK

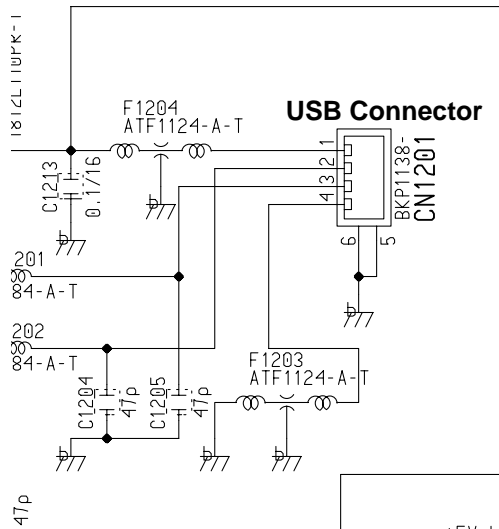
USB



The Mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, be sure to use parts of identical designation.

Serial IO





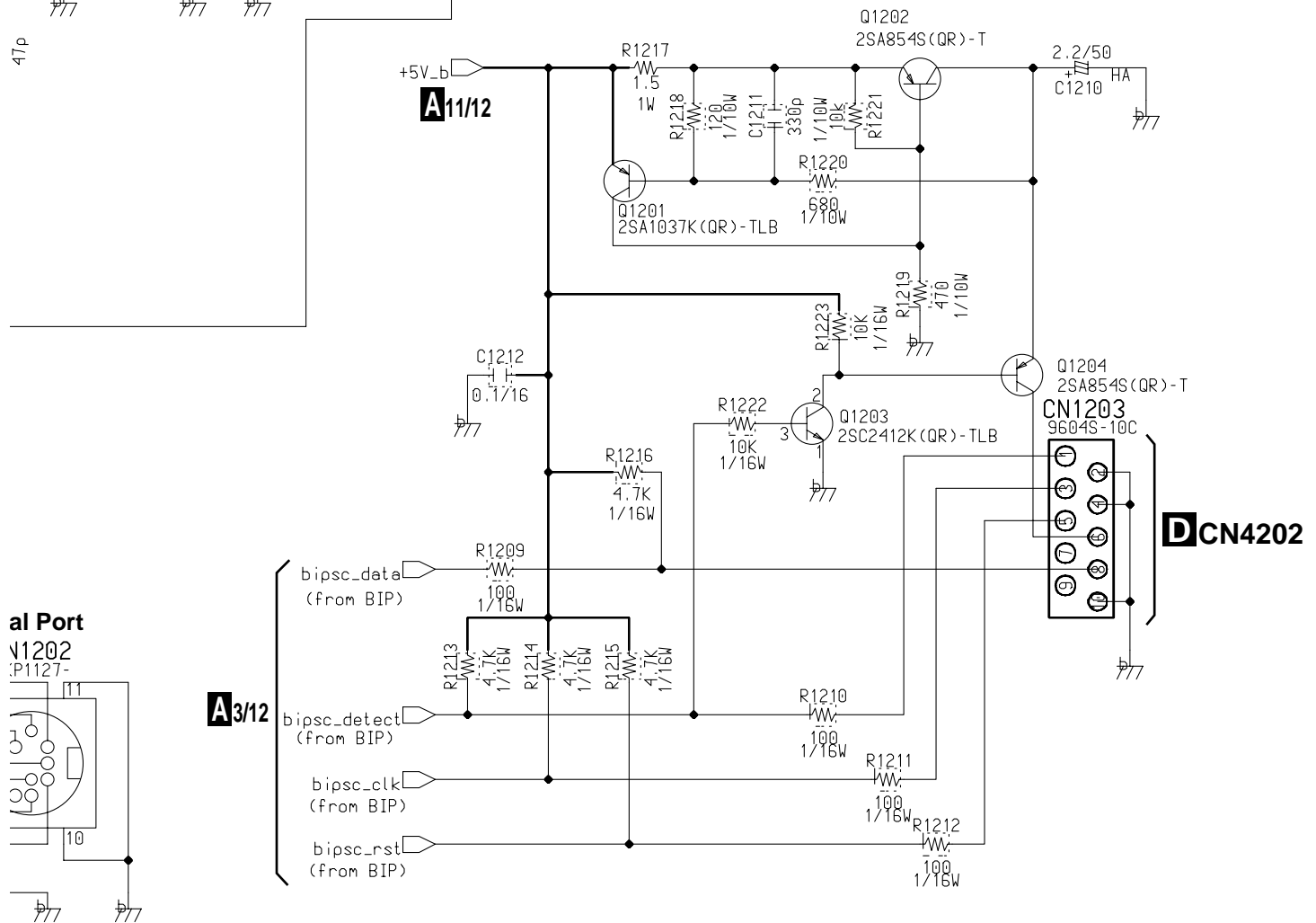
## RESISTORS

Indicated in  $\Omega$ , 1/16W 5% Tolerance unless otherwise noted  
K;K $\Omega$ ,M; $\Omega$ .

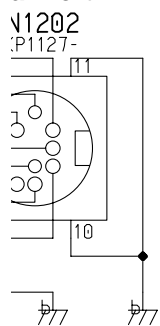
## CAPACITORS

Indicated in Capacity( $\mu$ F)/VOLTAGE(V) unless otherwise noted.P;PF.  
Indication without voltage is 50V except electrolytic capacitor.

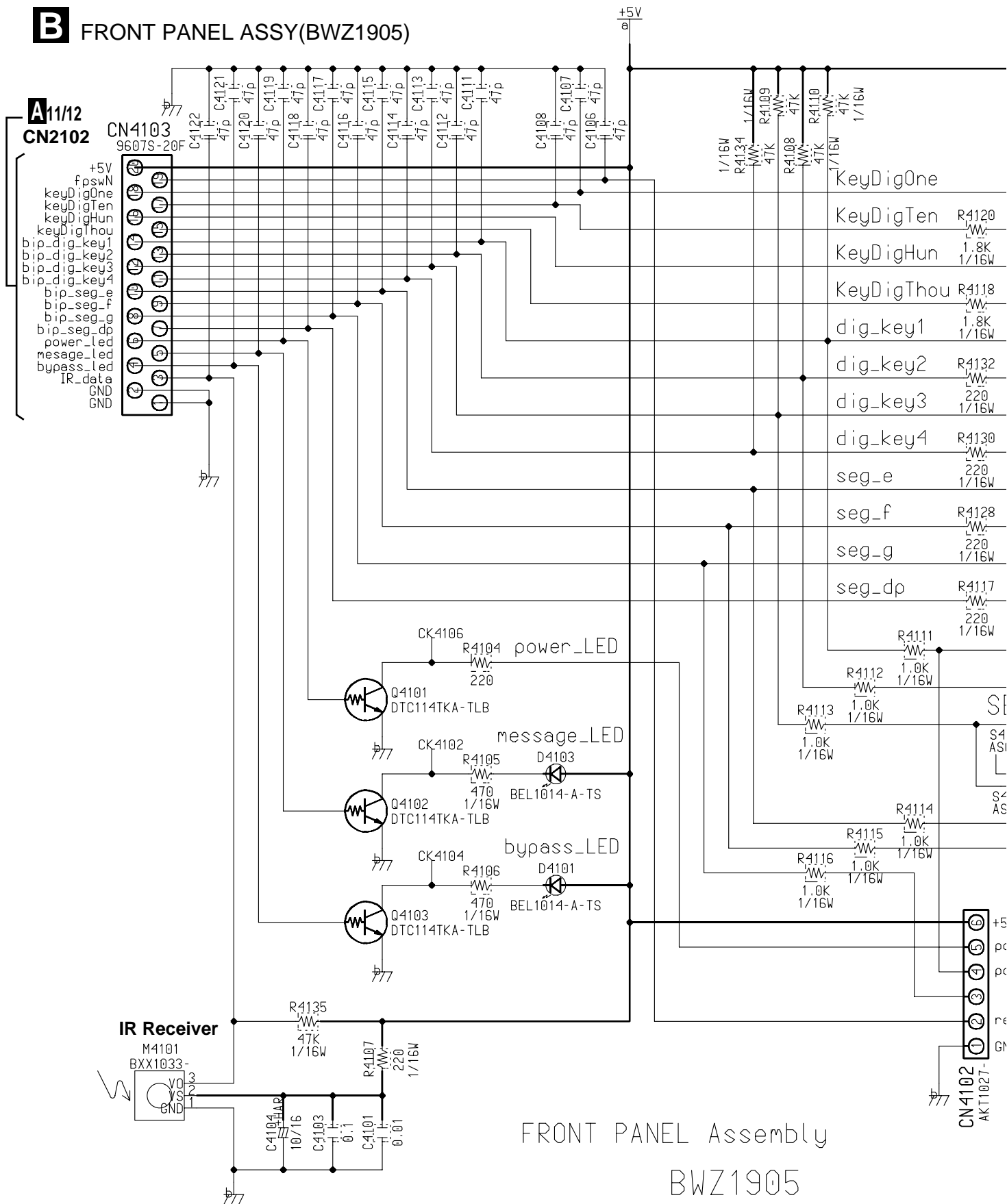
## Smart Card



## al Port



**A**<sub>11/12</sub>  
**CN2102**

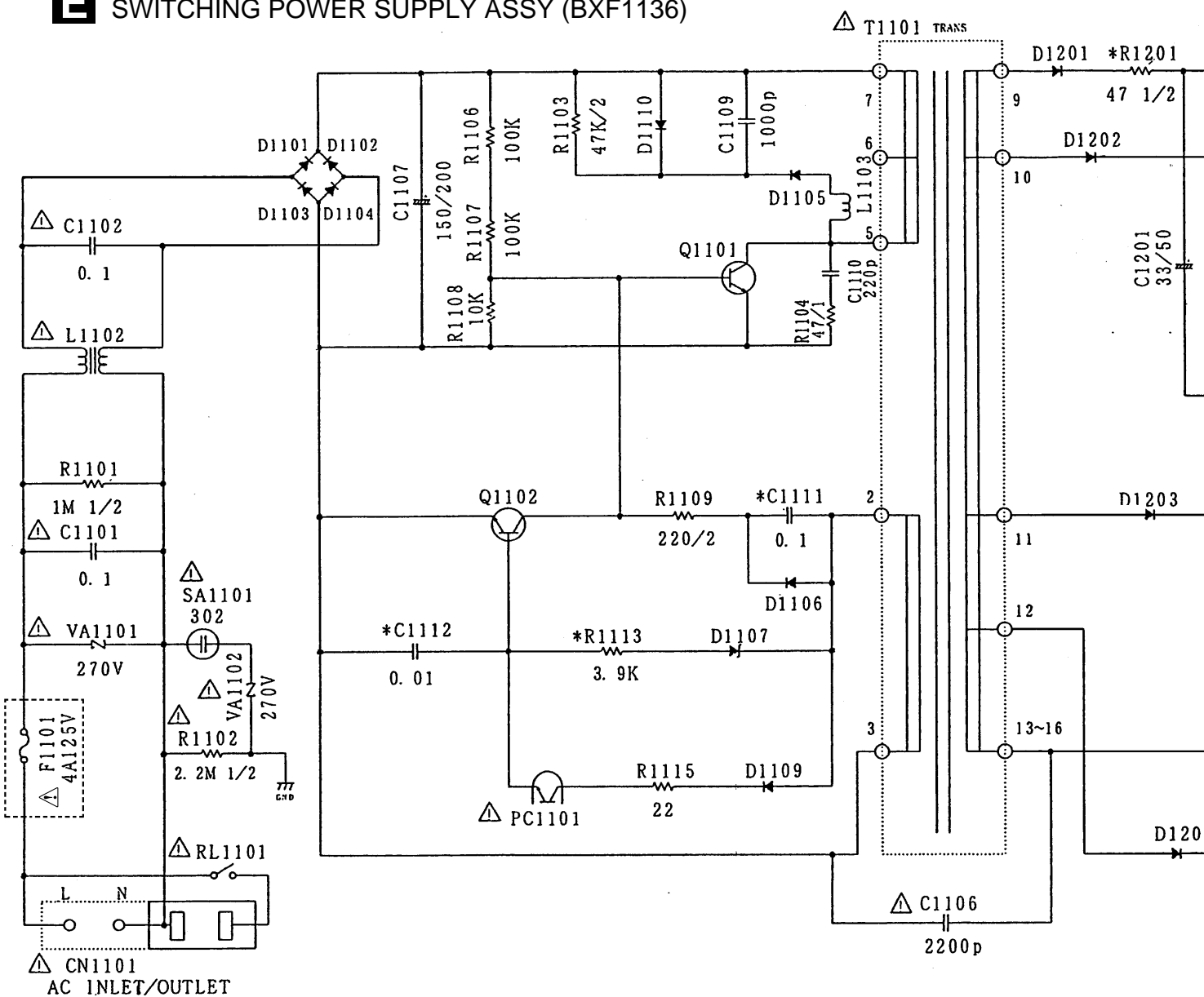


FRONT PANEL Assembly  
BWZ1905





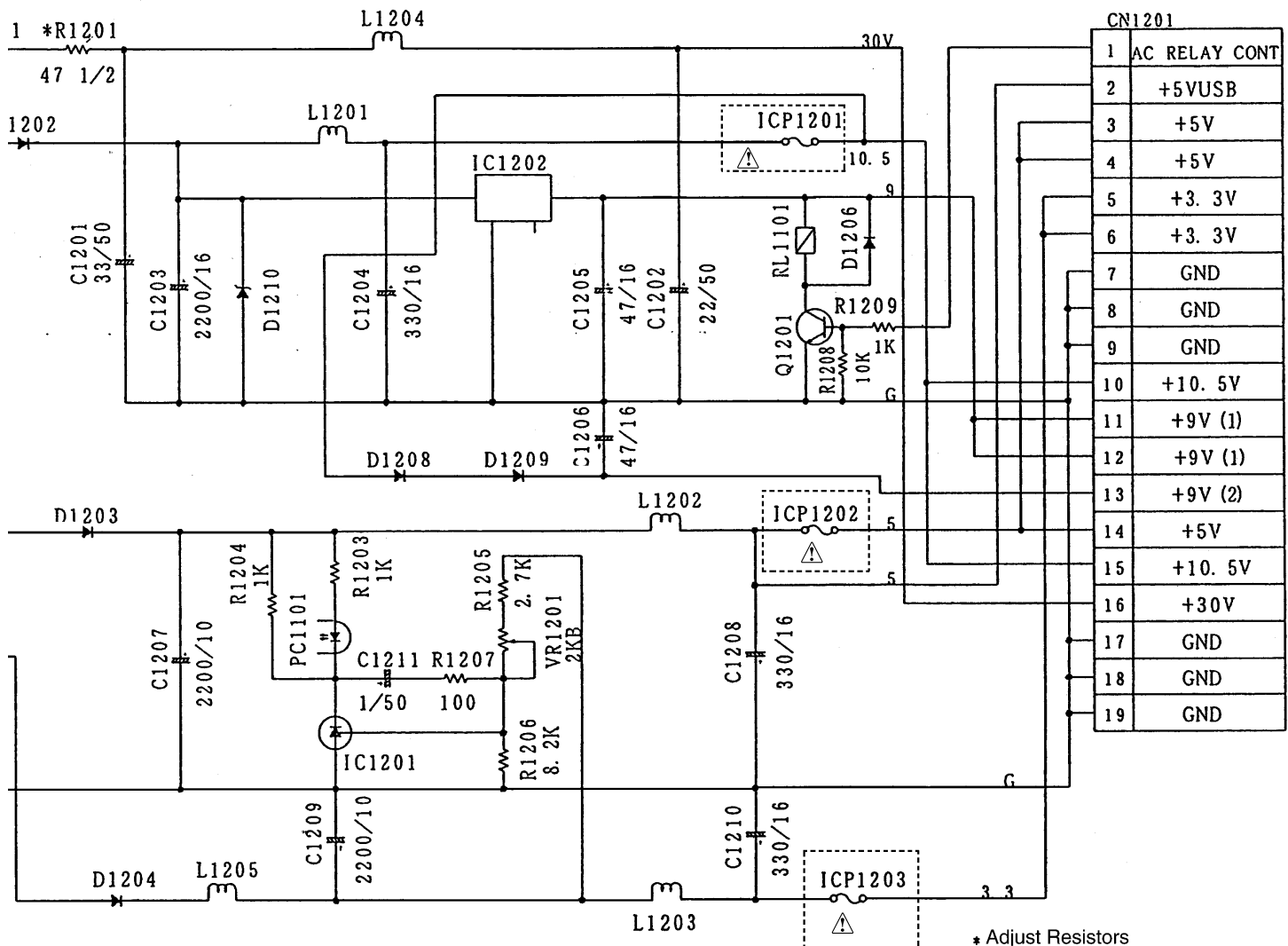
## 3.15 SWITCHING POWER SUPPLY ASSY

**E** SWITCHING POWER SUPPLY ASSY (BXF1136)

D1101	LT1505
D1102	LT1505
D1103	LT1505
D1104	LT1505
D1105	AG01A or PR1005
D1106	11ES2 or ERA15-02
D1107	MTZJ3.0 or MA4030 or RD3.0JS
D1109	1SS133 or 1SS119 or MA165
D1110	1A4 or
Q1101	2SC5241
Q1102	2SD1781
PC1101	ON3131 or ON3171 or PC123 or PC817

D1201	AG01A or PR1005
D1202	RK46 or D3S6M
D1203	RK44 or SB340
D1204	RK44 or SB340
D1206	1SS133 or 1SS119 or MA165
D1208	1N4005
D1209	1N4005
D1210	MA2150 or BZX85C15
IC1201	AN1431T or HA17431P or MM1431
IC1202	PQ09RD08 or KA78R09
	or PQ09RD11 or PQ09RF11
Q1201	2SC2412

\* These parts are not supplied as service parts.

A11/12  
CN2104

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,  
REPLACE ONLY WITH SAME TYPE NO. ICP-N20 MFD, BY  
ROHM CO., LTD. FOR ICP1201, ICP1202.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,  
REPLACE ONLY WITH SAME TYPE NO. ICP-N25 MFD, BY  
ROHM CO., LTD. FOR ICP1203.

## \* Adjust Resistors

symbol	min	typ	max
*C1111	0.047	0.1	0.1
*C1112	0.0047	0.01	0.047
*R1113	3.3K	3.9K	4.7K
*R1201	22	47	56

## • NOTE FOR FUSE REPLACEMENT

**CAUTION** -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.  
REPLACE WITH SAME TYPE AND RATINGS ONLY.

- The supplied repair parts are only following    marked parts.

F1101 : BEK1010  
ICP1201 : ICP-N20  
ICP1202 : ICP-N20  
ICP1203 : ICP-N25



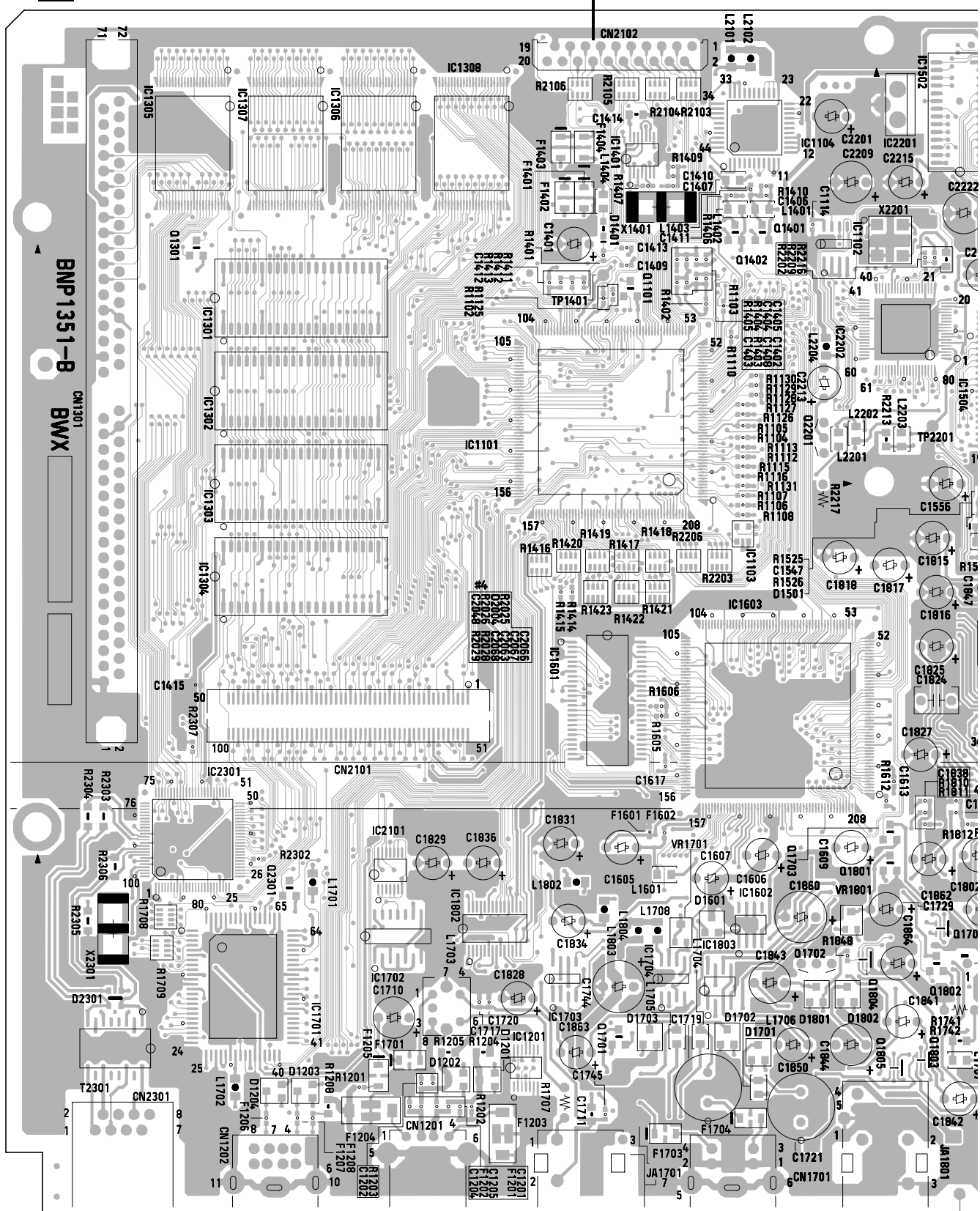


## 4.2 MAIN ASSY

**A** MAIN ASSY

**B** CN4103

- This PC



IC1305 Q1301	IC1307	IC1306	IC1308	IC1401 Q1101	IC1104 Q1402	IC2201 IC1102	IC1501
	IC1301 IC1302 IC1303 IC1304			IC1101 IC1601	IC1103 IC1603	IC2202	
IC2301 Q2301 IC1701		IC2101 IC1702	IC1802 IC1201 IC1703	IC1704 IC1803 IC1602		Q1801 Q1804 Q1805 Q1802 Q1803	Q170





## A



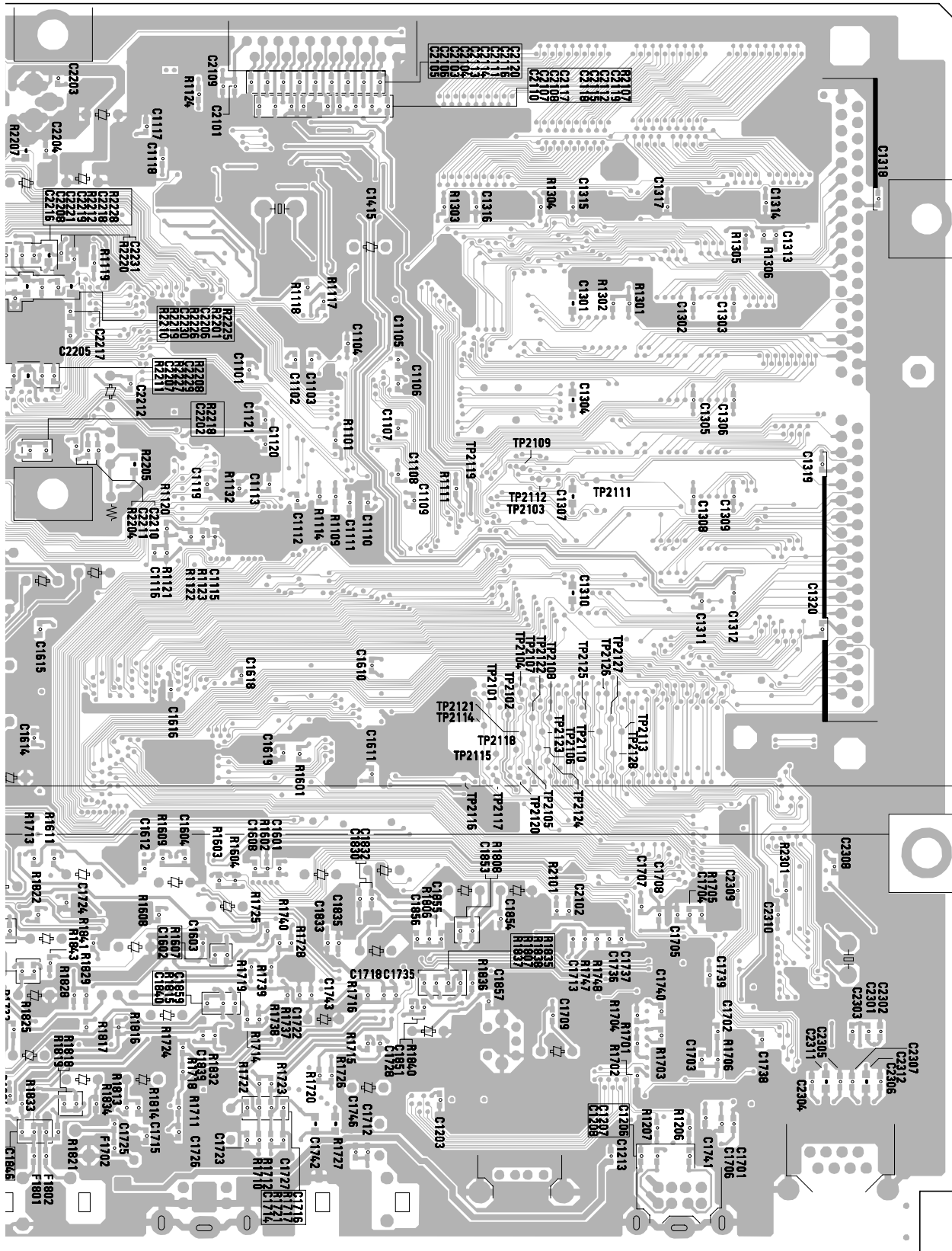
C

D



## SIDE B

- This PCB is a four-layered board. Middle layer is mainly connected to Vcc and GND.



(BNP1351-B)

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.  
●The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part.  
Therefore, when replacing, be sure to use parts of identical designation.  
●When ordering resistors, first convert resistance values into code form as shown in the following examples.  
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).  
560  $\Omega$   $\rightarrow$  56  $\times 10^1$   $\rightarrow$  561 ..... RD1/4PU  $\boxed{5} \boxed{6} \boxed{1} J$   
47k  $\Omega$   $\rightarrow$  47  $\times 10^3$   $\rightarrow$  473 ..... RD1/4PU  $\boxed{4} \boxed{7} \boxed{3} J$   
0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H  $\boxed{R} \boxed{5} \boxed{0} K$   
1  $\Omega$   $\rightarrow$  1R0 ..... RS1P  $\boxed{1} \boxed{R} \boxed{0} K$   
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).  
5.62k  $\Omega$   $\rightarrow$  562  $\times 10^1$   $\rightarrow$  5621 ..... RN1/4PC  $\boxed{5} \boxed{6} \boxed{2} \boxed{1} F$

CONTRAST OF PCB ASSEMBLIES

Mark	Symbol and Description	Part No.			Remarks
		BD-V1100 /KUXJ/1	BD-V1100 /KU/1	BD-V1110 /KUXJ	
$\Delta$	MAIN ASSY	BWX1141	BWX1141	BWX1141	*1 Constructed same. *2 Constructed same. *3 Constructed same.
	COMPLEX ASSY	BWM1292	BWM1296	BWM1292	
	└ FRONT PANEL ASSY	BWZ1905*1	BWZ1910*1	BWZ1905*1	
	└ POWER SWITCH ASSY	BWZ1906*2	BWZ1911*2	BWZ1906*2	
	└ CARD ASSY	BWZ1907*3	BWZ1912*3	BWZ1907*3	
	SWITCHING POWER SUPPLY ASSY	BXF1136	BXF1136	BXF1136	

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
<b>A</b>	<b>MAIN ASSY</b>				IC2101		TC74VHC32FT
	<b>SEMICONDUCTORS</b>				IC2002		TDA8050T
					IC2001		TDA8051T
					IC1801		TDA9852H
	IC1102	24LC16B			IC2202		TVP5020CPFP
	IC1104	570215			IC1503		UPC29L33J
	IC1802	AD1859JRS			IC1601		UPD4516161AG5-A10B
	IC1703,IC1704	AD8052AR			Q1201,Q1701,Q1802		2SA1037K
	IC1301-IC1304	AS4C1M16E5-60JC			Q1202,Q1204		2SA854S
	IC1501	BCM3116KPF			Q1702,Q2201		2SC1740S
	IC1502	CY7C199-15VC			Q1101,Q1203,Q1301,Q1801		2SC2412K
	IC1602	LM317LD			Q1401,Q1402,Q1501,Q1903,Q1904		2SC2714
	IC1305-IC1308	MBM29F800BA-70PFTN			Q2001		2SC2714
	IC1903	MC44306D			Q1901,Q1902		2SC5084
	IC1901	NJM12904M			Q1703		DTC143ZKA
	IC1803	NJM2068MD			Q1704,Q1803-Q1805,Q1905		HN1C01FU
	IC2201	NJM7805FA			D2001-D2003		1SV242
	IC1907	NJM78M05FA			D2006		DAN202K
	IC1904	PA5015C			D1201-D1204,D1601,D1701-D1703		DAN217
	IC1201	PDIUSBP11APW			D1801,D1802,D2101		DAN217
	IC1906	PQ09RD1B			D1401,D1501		HVU359
	IC1103	PST9228N			D2004,D2005		SVC203CP
	IC1101	SCABIP2BUAMTA			D1901		UDZ24B
	IC1504	SS38122FB21		$\Delta$	TH1201		1812L110PR
	IC1701	STI4600ACV		<b>COILS AND FILTERS</b>			
	IC1603	STI5600ACV			F1906		ATF-114
	IC1902	TC74ACT08FT			F1203,F1204		ATF1124
	IC1905	TC74HC4066AFT			F1907		ATF1132
	IC1702	TC74HCU04AF			L1908	Sync Coil	BTC1016
					T2001		BTC1019
	IC1401	TC74LVX04FT					

Mark	No.	Description	Part No.
	T1901	FM Det. Coil	BTE1011
	F2003	Molded Coil	BTE1028
	F1903		BTF1078
	F1901	SAW Filter	BTF1079
	F1909	SAW Filter	BTF1082
	F1401-F1403		BTF1084
	F1205,F1701,F1703,F1704		BTF1086
	F1404		BTF1088
	L1503,L1504,L1903,L2006		BTH1087
	L2101,L2102,L2204		BTH1087
	L1701,L1702,L1708,L1801-L1804		BTH1088
	L2008		DTL1038
	L1401,L1403,L2001,L2002		LCTAR12J2520
	L1907		LCYA100J2520
	L2009,L2014-L2016		LCYA101J2520
	L1909		LCYA120J2520
	L1911		LCYA150J2520
	L1404		LCYA1R5J2520
	L1904,L1910		LCYA220J2520
	L2010		LCYA22NJ2520
	L1507,L2201,L2203		LCYA2R2J2520
	L1704-L1707		LCYA3R3J2520
	L1601		LCYA470J2520
	L2005		LCYA47NJ2520
	L2202		LCYA4R7J2520
	L2003,L2012		LCYA56NJ2520
	L1501,L1502,L1505,L1506		LCYA5R6J2520
	L2007		LCYA68NJ2520
	L1402		LCYAR22J2520
	L1906		LCYAR27J2520
	L1914,L1915,L2011,L2013		LCYAR47J2520
	L2004		LCYAR56J2520
	L1913		LCYAR68J2520
	L1703		PTL1003
	F1201,F1202,F1206-F1208		VTF1084
	F1501,F1502,F1601,F1602,F1702		VTF1084
	F1705,F1801,F1802,F1904,F1905		VTF1084
	F2001,F2002,F2004		VTF1084

**CAPACITORS**

TC1901 (2.3pF – 10pF)	ACM-014
C1865	BCH1030
C1939	BCH1037
C1848	BCH1047
C1804,C1805	BCH1048
C1827	BCH1049
C1967	BCH1069
C1969	BCH1070
C2071,C2072	CCSRCH100D50
C1403,C1566-C1569,C1724,C1725	CCSRCH101J50
C1737,C1839,C1840,C1908,C1961	CCSRCH101J50
C1963,C2027,C2033,C2038	CCSRCH101J50
C2059	CCSRCH120J50
C2069,C2070	CCSRCH121J50
C2055	CCSRCH150J50
C1313,C1555	CCSRCH151J50
C1407,C2017,C2051	CCSRCH180J50
C1962	CCSRCH200J50
C2063,C2066	CCSRCH220J50
C1714-C1716,C1723,C1726,C1727	CCSRCH221J50
C1731,C1732,C2008,C2009,C2015	CCSRCH221J50
C2103-C2120	CCSRCH221J50
C1510,C1519,C1745,C2054	CCSRCH270J50

Mark	No.	Description	Part No.
	C1206-C1208,C1413,C2047		CCSRCH271J50
	C1211		CCSRCH331J50
	C1404,C1405,C1511,C1542,C1543		CCSRCH390J50
	C2041-C2044		CCSRCH391J50
	C1201,C1202,C1204,C1205		CCSRCH470J50
	C1562-C1565,C1837,C1838,C1911		CCSRCH470J50
	C1945-C1947,C1952		CCSRCH470J50
	C2056		CCSRCH471J50
	C1931		CCSRCH4R0C50
	C1964,C1973		CCSRCH560J50
	C1411		CCSRCH5R0C50
	C1406,C1410,C2024,C2029,C2034		CCSRCH680J50
	C2025,C2032,C2037		CCSRCH7R0D50
	C1608,C1855,C2031,C2036		CCSRCH820J50
	C1937,C2067,C2068		CCSRCH8R0D50
	C1856,C2030,C2035,C2078		CCSRCH9R0D50
	C1720,C1746,C1907		CCSRCK1R0C50
	C1520		CCSRCK2R0C50
	C1401,C1517,C1518,C1522,C1529		CEHAT100M50
	C1556,C1605-C1607,C1609,C1729		CEHAT100M50
	C1808,C1828,C1829,C1831,C1834		CEHAT100M50
	C1836,C1850,C1861-C1863,C1901		CEHAT100M50
	C1918,C1955,C1966,C2122-C2125		CEHAT100M50
	C2137,C2138,C2201,C2213,C2215		CEHAT100M50
	C2220		CEHAT100M50
	C1710,C1801,C1812,C1843,C1844		CEHAT101M25
	C2209,C2222		CEHAT101M25
	C1719,C1721		CEHAT102M16
	C1806,C1807,C1841,C1842,C1953		CEHAT1R0M50
	C1744,C1858,C1860		CEHAT221M25
	C1210,C1802,C1803,C1817,C1818		CEHAT2R2M50
	C1821,C1825,C1864		CEHAT2R2M50
	C2076		CEHAT470M25
	C1956,C2075		CEHAT470M50
	C1810,C1815,C1816,C1847		CEHAT4R7M50
	C2013		CEHATR10M50
	C1957		CEHATR47M50
	C1823,C1824		CFTLA154J50
	C1814		CFTLA224J50
	C1849		CFTLA473J50
	C1813		CFTLA474J50
	C1711		CKSQYF104Z50
	C1301,C1304,C1307,C1310,C1414		CKSQYF105Z16
	C1742,C1912		CKSQYF105Z16
	C1530,C1531,C1541,C1544		CKSRYB102K50
	C1549-C1554,C1717,C1909,C1921		CKSRYB102K50
	C1923,C1929,C1950,C1951,C1958		CKSRYB102K50
	C1970,C2010,C2011,C2018-C2020		CKSRYB102K50
	C2026,C2045,C2052,C2053		CKSRYB102K50
	C2061,C2062,C2074,C2077		CKSRYB102K50
	C1101-C1113,C1115,C1116		CKSRYB103K50
	C1119-C1121,C1702-C1704,C1741		CKSRYB103K50
	C1913,C1915,C1916,C1932		CKSRYB103K50
	C1934-C1936,C1938,C1954,C1960		CKSRYB103K50
	C2004,C2005,C2048		CKSRYB103K50
	C1819,C1820,C2064		CKSRYB153K50
	C1851,C1853		CKSRYB222K50
	C1712		CKSRYB471K50
	C2210,C2211		CKSRYB681K50
	C1604,C2016		CKSRYB682K50
	C1845,C1846		CKSRYB821K50
	C1822,C1826		CKSRYB822K50

# BD-V1100, BD-V1110

Mark	No.	Description	Part No.
	C1114,C1203,C1302,C1303		CKSRYF103Z50
	C1305,C1306,C1308,C1309		CKSRYF103Z50
	C1311,C1312,C1314-C1320,C1402		CKSRYF103Z50
	C1409,C1514,C1545-C1548,C1706		CKSRYF103Z50
	C1708,C1713,C1733-C1735		CKSRYF103Z50
	C1738-C1740,C1902-C1906,C1917		CKSRYF103Z50
	C1942-C1944,C1948,C1949,C2040		CKSRYF103Z50
	C2102,C2121,C2219,C2230,C2231		CKSRYF103Z50
	C1117,C1118,C1212,C1213,C1408		CKSRYF104Z16
	C1412,C1501,C1507,C1512,C1513		CKSRYF104Z16
	C1521,C1524-C1526,C1601-C1603		CKSRYF104Z16
	C1610-C1619,C1701,C1705,C1707		CKSRYF104Z16
	C1709,C1718,C1722,C1728,C1736		CKSRYF104Z16
	C1743,C1809,C1811,C1830		CKSRYF104Z16
	C1832,C1833,C1835,C1852,C1854		CKSRYF104Z16
	C1857,C1859,C1910,C1914		CKSRYF104Z16
	C1919,C1920,C1922,C1924-C1928		CKSRYF104Z16
	C1930,C1933,C1940,C1941,C1968		CKSRYF104Z16
	C1971,C1972,C2001-C2003		CKSRYF104Z16
	C2006,C2007,C2012,C2014		CKSRYF104Z16
	C2021-C2023,C2028,C2039,C2046		CKSRYF104Z16
	C2049,C2050,C2057,C2060,C2065		CKSRYF104Z16
	C2073,C2101,C2126-C2136		CKSRYF104Z16
	C2202-C2208,C2212,C2214		CKSRYF104Z16
	C2216-C2218,C2221,C2229		CKSRYF104Z16
	C1532-C1535		CKSRYF334Z16
	C1959		CQ MBA393J50
	C1730		CQ MBA821J50

## RESISTORS

R1546,R1547 R1421-R1423 R1419,R1548,R2203,R2206 R1416-R1418,R1420,R1708,R1709 R2103-R2106	RAB4C101J RAB4C103J RAB4C181J RAB4C330J RAB4C470J
R1741,R2217 R1707 R2013,R2216 R1920 R1221	RD1/2VM271J RD1/2VM750J RS1/10S100J RS1/10S101J RS1/10S103J
R1218 R1727,R1901 R2225-R2228 R1219 R1744,R2207,R2221	RS1/10S121J RS1/10S182J RS1/10S2R2J RS1/10S471J RS1/10S4R7J
R1208 R1842 R1220 R1742,R1743,R2205,R2213 R1815,R1832	RS1/10S510J RS1/10S5R1J RS1/10S681J RS1/10S750J RS1/16S1002F
R1609 R1801 R1714-R1716 R1722-R1724 R1607	RS1/16S1211F RS1/16S1580F RS1/16S2000F RS1/16S2211F RS1/16S2370F
R1120 R1717,R1718,R1721 R1811,R1812 R1608 R1121	RS1/16S3300F RS1/16S3601F RS1/16S3742F RS1/16S4020F RS1/16S5601F
R1809,R1810 R1827 R1204,R1205	RS1/16S5621F RS1/16S8251F RS1/8S24R3F

Mark	No.	Description	Part No.
	R2224 R1217 VR1701 (1kΩ) VR1901 (2.2kΩ) VR1801 (4.7kΩ)		RS1MMF120J RS1MMF1R5J ACP1089 ACP1090 ACP1091
	Other Resistors		RS1/16S□□□J

## OTHERS

△ M1901	Up/Down Tuner	BXF1091
△ M1701	RF Modulator	BXF1062
CN1203	10P FFC Connector	9604S-10C
CN2102	20P FFC Connector	9604S-20C
JA1801	3P Pin Jack	BKB1019
CN1701	4P Mini DIN Socket	BKP1091
CN2104	19P Plug	BKP1120
CN1202	8P Mini DIN Socket	BKP1127
CN1201	USB Connector	BKP1138
CN2101	100P Connector (RCPT)	BKP1139
	FSK Case 1	BNK1126
X1401 (27MHz)		BSS1061
X1801 (514.5KHz)		BSS1079
X1901 (26.096MHz)		BSS1080
X1501 (16.384MHz)		BSS1081
X1502 (24.704MHz)		BSS1082
X2001,X2002 (4.000MHz)		BSS1084
X2201 (26.800MHz)		BSS1086
CN2103	3P Side Post	S3B-EH
JA1701	1P Pin Jack	VKB1077

## COMPLEX ASSY

### OTHERS

J8005	JUMP WIRE	D15A06-075-2651
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## B FRONT PANEL ASSY

### SEMICONDUCTORS

Q4101-Q4103 Q4104,Q4105 D4101,D4103 D4104 D4105	DTC114TK HN1A01F BEL1014 BEL1042 DAN202K
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### SWITCHES AND RELAYS

S4101-S4106	ASG1051
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### CAPACITORS

C4106-C4108,C4111-C4122 C4104,C4105 C4101 C4102,C4103	CCSRCH470J50 CEHAR100M16 CKSRYF103Z50 CKSRYF104Z16
--	---

### RESISTORS

Other Resistors	RS1/16S□□□J
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### OTHERS

CN4103	20P FFC Connector	9607S-20F
M4101	IR RECEIVER	BXX1033

Mark	No.	Description	Part No.
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**POWER SWITCH ASSY****SEMICONDUCTORS**

D4102	BEL1014
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**SWITCHES AND RELAYS**

S4107	ASG1051
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**CARD ASSY****OTHERS**

CN4202	10P FFC Connector	9607S-10F
CN4201	8P Card Connector	BKP1117

**SWITCHING POWER SUPPLY ASSY**

F1101	(4A)	BEK1010
ICP1201	IC Protector	ICP-N20
ICP1202	IC Protector	ICP-N20
ICP1203	IC Protector	ICP-N25

## 6. ADJUSTMENT

Note : Refer to the "**Service Know-how (SKB54005)**" for the details.

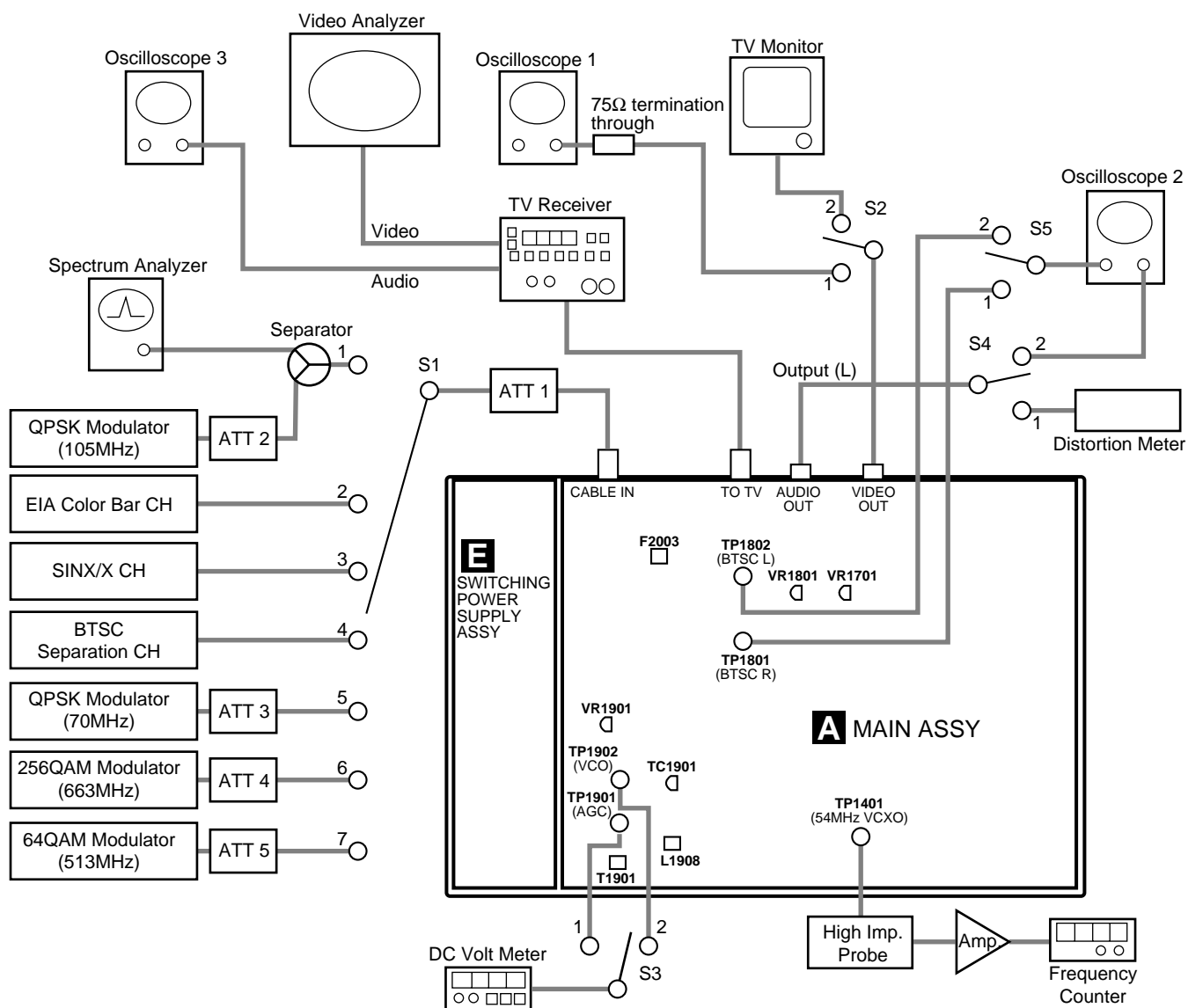


Fig.1 Adjustment Connections

- **Input Signals**

1	QPSK Modulator	Center Freq. = 105MHz	All slots have to be opened. (for QPSK Tx Adj.)
2	EIA Color Bar	Video	EIA Color Bar 87.5% Mod.
		Audio	1kHz Sin Wave $\pm$ 25kHz Dev.
3	SINX/X	Video	SINX/X (0.5MHz~3.75MHz)
		Audio	400Hz Sin Wave $\pm$ 25kHz Dev.
4	BTSC Separation	Video	Black 0 IRE Flat Signal
		Audio	L = 300Hz, R = 3.1kHz Sin Wave 14% Mod. Each CH
5	QPSK Modulator	Center Freq. = 70MHz	
6	256QAM Modulator	Center Freq. = 663MHz	Video Stream = Full White APL100% MPEG2 Video
			Audio Stream = 1kHz FS -20dB MPEG1 Audio
7	64QAM Modulator	Center Freq. = 513MHz	Data channel

Note 1 : Perform the NTSC ch setting if necessary.

2 : Set the Fv/Fa difference to -15dB.

## 7. GENERAL INFORMATION

### 7.1 DIAGNOSIS

#### 7.1.1 TROUBLESHOOTING

Note : Refer to the "Service Know-how (SKB54005)" for the details.

### 7.2 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

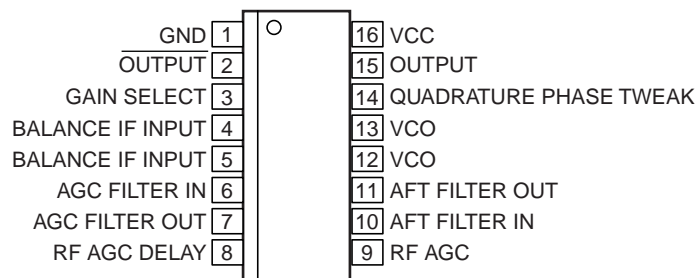
#### •List of IC

MC44306D	TDA8051T	TDA8050T	SCABIP2BUAMTA	570215	MBM29F800BA-70PF
SS38122FB21	BCM3116KPF	STI5600ACV	STI4600ACV	TDA9852H	AD1859JRS
TVP5020CPFP	PDIUSBP11APW				

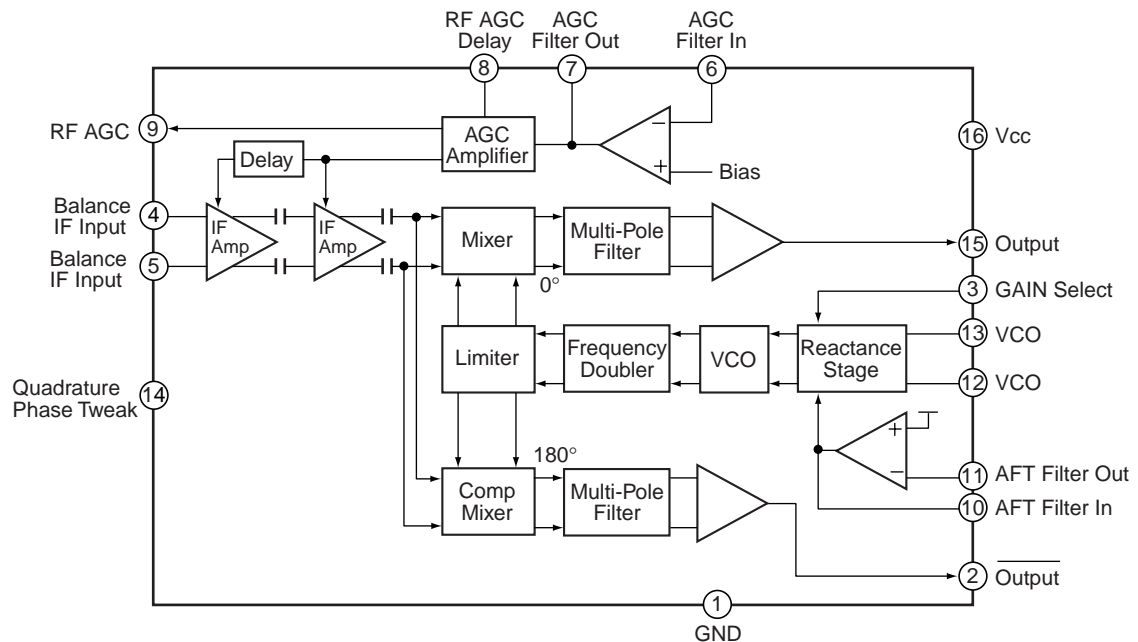
#### ■ MC44306D [MAIN ASSY (1/12) : IC1903]

##### • IF Down Converter IC

##### • Pin Arrangement



##### • Block Diagram

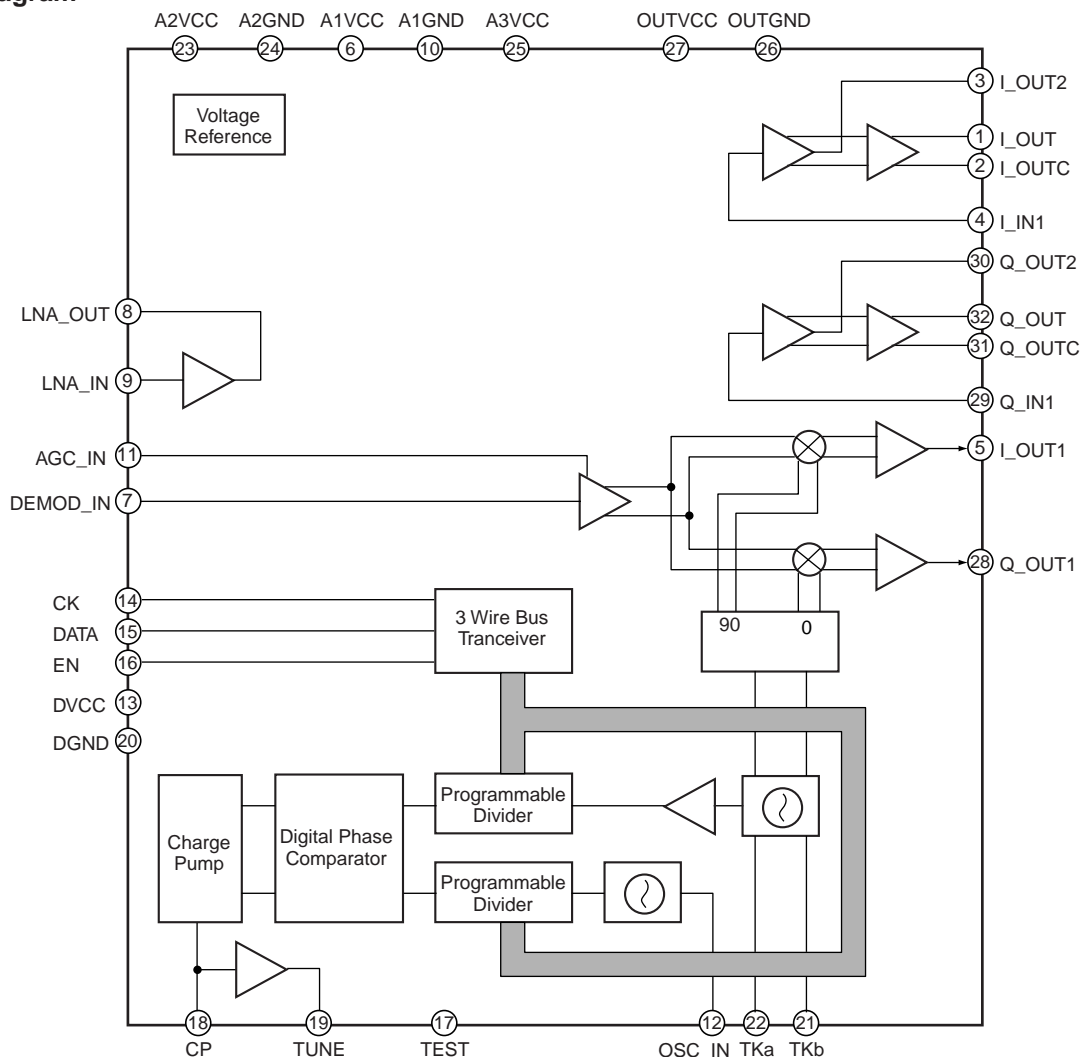




## ■ TDA8051T [MAIN ASSY (2/12) : IC2001]

### • QPSK Receiver IC

### • Block Diagram



### • Pin Function

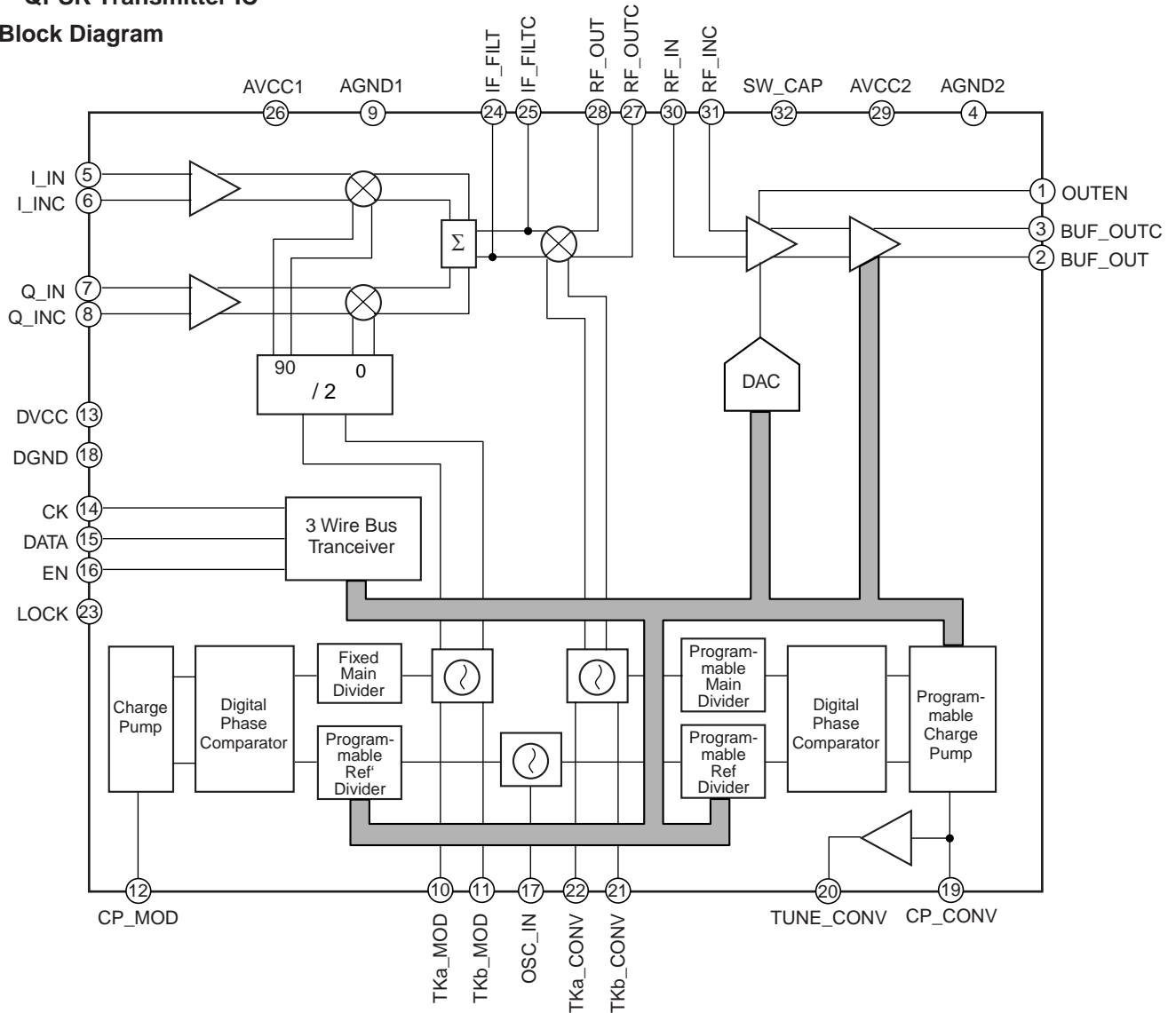
No.	Pin Name	Function	No.	Pin Name	Function
1	I_OUT	I data bufferised balanced output	17	TEST	Test pin : do not connect
2	I_OUTC	I data bufferised balanced output	18	CP	Charge pump output for PLL loop filter
3	I_OUT2	I data filtered output	19	TUNE	Tuning voltage output
4	I_IN1	Input to active filter amplifier for I data	20	DGND	Digital DC ground
5	I_OUT1	I data raw output	21	TKb	VCO tank circuit input
6	A1VCC	Analog DC supply	22	TKa	VCO tank circuit input
7	DEMOM_IN	Demodulator RF input	23	A2VCC	Analog DC supply
8	LNA_OUT	Low noise amplifier RF output	24	A2GND	Analog DC ground
9	LNA_IN	Low noise amplifier RF input	25	A3VCC	Analog DC supply
10	A1GND	Analog DC ground	26	OUTGND	Output amplifiers DC ground
11	AGC_IN	AGC control voltage input	27	OUTVCC	Output amplifiers DC supply
12	OSC_IN	Oscillator input	28	Q_OUT1	Q data raw output
13	DVCC	Digital DC supply	29	Q_IN1	Input to active filter amplifier for Q data
14	CK	3 wire bus serial control Clock	30	Q_OUT2	Q data filtered output
15	DATA	3 wire bus serial control Data	31	Q_OUTC	Q data bufferised balanced output
16	EN	3 wire bus serial control Enable (active low)	32	Q_OUT	Q data bufferised balanced output



# TDA8050T [MAIN ASSY (2/12) : IC2002]

## • QPSK Transmitter IC

### • Block Diagram



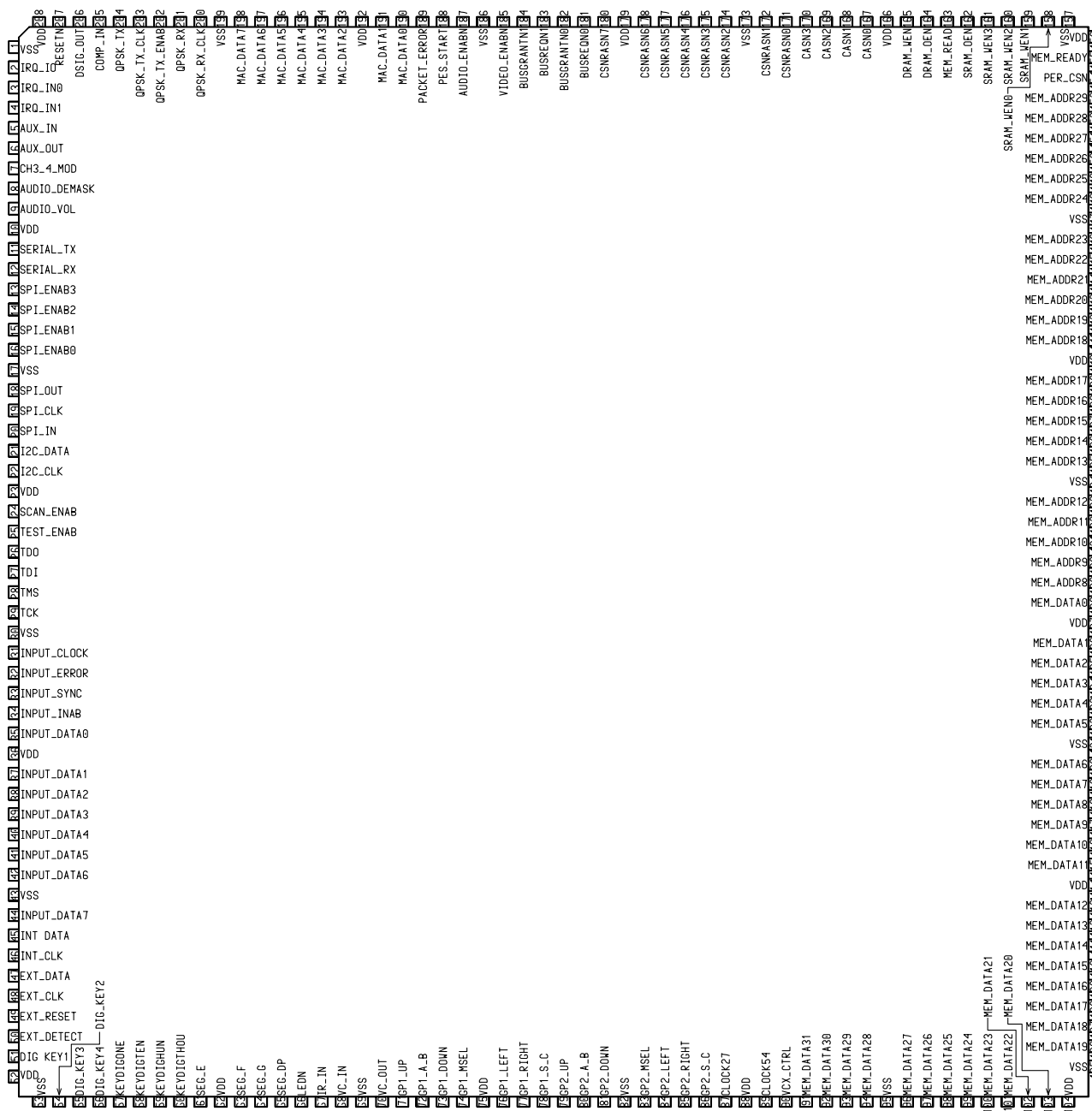
### • Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	OUTEN	Output Enable	17	OSC_IN	Crystal oscillator input
2	BUF_OUT	Output amplifier balanced output	18	DGND	Digital ground
3	BUF_OUTC	Output amplifier balanced output	19	CP_CONV	Converter charge pump output for PLL loop filter
4	AGND2	Converter analog ground	20	TUNE_CONV	Tuning voltage output for converter VCO
5	I_IN	I balanced input	21	TKb_CONV	Converter VCO tank circuit input 1
6	I_INC	I balanced input	22	TKa_CONV	Converter VCO tank circuit input 2
7	Q_IN	Q balanced input	23	LOCK	Lock detect signal
8	Q_INC	Q balanced input	24	IF_FILT	IF balanced output to filter
9	AGND1	Modulator analog ground	25	IF_FILT	IF balanced output to filter
10	TKa_MOD	Modulator VCO tank circuit input2	26	AVCC1	Modulator analog supply
11	TKb_MOD	Modulator VCO tank circuit input1	27	RF_OUTC	RF balanced output to filter
12	CP_MOD	Modulator charge pump output for PLL loop Filter	28	RF_OUT	RF balanced output to filter
13	DVCC	Digital supply	29	AVCC2	Converter analog supply
14	CK	3 wire bus serial control Clock	30	RF_IN	RF balanced input to programmable amplifier
15	DATA	3 wire bus serial control Data	31	RF_INC	RF balanced input to programmable amplifier
16	EN	3 wire bus serial control Enable	32	SW_CAP	Switch capacitor

## SCABIP2BUAMTA [MAIN ASSY (3/12) : IC1101

• CPU/DEMUX (BIP)

### • Pin Arrangement

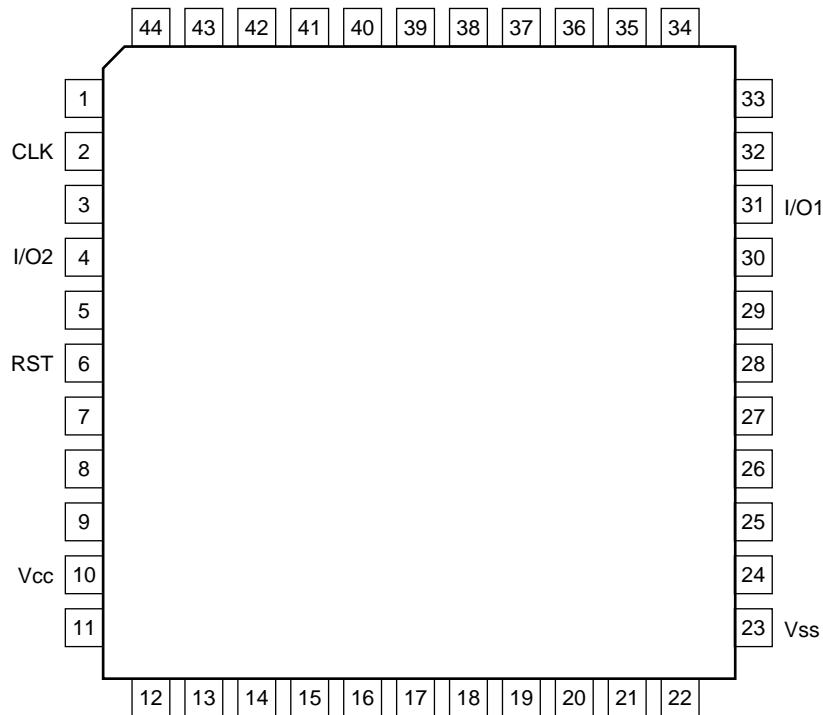


## ● Pin Name

No.	Name	I/O	No.	Name	I/O	No.	Name	I/O	No.	Name	I/O
1	GND	–	53	GND	–	105	GND	–	157	GND	–
2	IRQ_IO	I/O	54	DIG_KEY2	I/O	106	MEM_DATA19	I/O	158	SRAM_WEN0	I/O
3	IRQ_IN0	I	55	DIG_KEY3	I/O	107	MEM_DATA18	I/O	159	SRAM_WEN1	I/O
4	IRQ_IN1	I	56	DIG_KEY4	I/O	108	MEM_DATA17	I/O	160	SRAM_WEN2	I/O
5	AUX_IN	I/O	57	KEYDIGONE	O	109	MEM_DATA16	I/O	161	SRAM_WEN3	I/O
6	AUX_OUT	O	58	KEYDIGTEN	O	110	MEM_DATA15	I/O	162	SRAM_OEN	I/O
7	GENIO0	I/O	59	KEYDIGHUM	O	111	MEM_DATA14	I/O	163	SRAM_READ	I/O
8	GENIO1	I/O	60	KEYDIGTHOU	O	112	MEM_DATA13	I/O	164	DRAM_OEN	I/O
9	AUDIO_VOL	O	61	SEG_E	O	113	MEM_DATA12	I/O	165	DRAM_WEN	I/O
10	VDD	–	62	VDD	–	114	VDD	–	166	VDD	–
11	SERIAL_TX	O	63	SEG_F	O	115	MEM_DATA11	I/O	167	CASN0	O
12	SERIAL_RX	I	64	SEG_G	O	116	MEM_DATA10	I/O	168	CASN1	O
13	ETHER_IORD	O	65	SEG_DP	O	117	MEM_DATA9	I/O	169	CASN2	O
14	ETHER_MERD	I/O	66	GENIO2	I/O	118	MEM_DATA8	I/O	170	CASN3	O
15	SPI_ENAB1	I/O	67	IR_IN	I	119	MEM_DATA7	I/O	171	CSNRASN0	O
16	SPI_ENAB0	I/O	68	USB_OEN	O	120	MEM_DATA6	I/O	172	CSNRASN1	O
17	GND	–	69	GND	–	121	GND	–	173	GND	–
18	SPI_OUT	O	70	USB_SPEED	O	122	MEM_DATA5	I/O	174	CSNRASN2	O
19	SPI_CLK	O	71	USB_VPO	O	123	MEM_DATA4	I/O	175	CSNRASN3	O
20	SPI_IN	I	72	USB_VMP	O	124	MEM_DATA3	I/O	176	CSNRASN4	O
21	I2C_DATA	I/O	73	CLOCK48	I	125	MEM_DATA2	I/O	177	CSNRASN5	O
22	I2C_CLK	I/O	74	USB_RCV	I	126	MEM_DATA1	I/O	178	CSNRASN6	O
23	VDD	–	75	VDD	–	127	VDD	–	179	VDD	–
24	SCAN_ENAB	I	76	USB_VP	I	128	MEM_DATA0	I/O	180	CSNRASN7	O
25	TEST_ENAB	I	77	USB_VM	I	129	MEM_ADDR8	I/O	181	BUSREQN0	I
26	TDO	O	78	RESET_OUTN	O	130	MEM_ADDR9	I/O	182	BUSGRANTN0	O
27	TDI	I	79	GENIO3	I/O	131	MEM_ADDR10	I/O	183	BUSREQN1	I
28	TMS	I	80	GENIO4	I/O	132	MEM_ADDR11	I/O	184	BUSGRANTN1	I/O
29	TCK	I	81	GENIO5	I/O	133	MEM_ADDR12	I/O	185	VIDEO_ENABN	I/O
30	GND	–	82	GND	–	134	GND	–	186	GND	–
31	INPUT_CLOCK	I	83	GENIO6	I/O	135	MEM_ADDR13	I/O	187	AUDIO_ENABN	I/O
32	INPUT_ERROR	I/O	84	GENIO7	I/O	136	MEM_ADDR14	I/O	188	PES_START	I/O
33	INPUT_SYNC	I	85	GENIO8	I/O	137	MEM_ADDR15	I/O	189	PACKET_ERROR	I/O
34	INPUT_ENAB	I	86	GENIO9	I/O	138	MEM_ADDR16	I/O	190	MAC_DATA0	I/O
35	INPUT_DATA0	I	87	CLOCK27	O	139	MEM_ADDR17	I/O	191	MAC_DATA1	I/O
36	VDD	–	88	VDD	–	140	VDD	–	192	VDD	–
37	INPUT_DATA1	I	89	CLOCK54	I	141	MEM_ADDR18	I/O	193	MAC_DATA2	I/O
38	INPUT_DATA2	I	90	VCX_CTRL	O	142	MEM_ADDR19	I/O	194	MAC_DATA3	I/O
39	INPUT_DATA3	I	91	MEM_DATA31	I/O	143	MEM_ADDR20	I/O	195	MAC_DATA4	I/O
40	INPUT_DATA4	I	92	MEM_DATA30	I/O	144	MEM_ADDR21	I/O	196	MAC_DATA5	I/O
41	INPUT_DATA5	I/O	93	MEM_DATA29	I/O	145	MEM_ADDR22	I/O	197	MAC_DATA6	I/O
42	INPUT_DATA6	I/O	94	MEM_DATA28	I/O	146	MEM_ADDR23	I/O	198	MAC_DATA7	I/O
43	GND	–	95	GND	–	147	GND	–	199	GND	–
44	INPUT_DATA7	I/O	96	MEM_DATA27	I/O	148	MEM_ADDR24	I/O	200	QPSK_RX_CLK	I
45	INT_DATA	I/O	97	MEM_DATA26	I/O	149	MEM_ADDR25	I/O	201	QPSK_RX	I
46	INT_CLK	O	98	MEM_DATA25	I/O	150	MEM_ADDR26	I/O	202	QPSK_TX_ENAB	O
47	EXT_DATA	I/O	99	MEM_DATA24	I/O	151	MEM_ADDR27	I/O	203	QPSK_TX_CLK	I
48	EXT_CLK	O	100	MEM_DATA23	I/O	152	MEM_ADDR28	I/O	204	QPSK_TX	O
49	EXT_RESET	O	101	MEM_DATA22	I/O	153	MEM_ADDR29	I/O	205	COMP_IN	I
50	EXT_DETECT	I	102	MEM_DATA21	I/O	154	PER_CSN	I/O	206	DSIG_OUT	O
51	DIG_KEY1	I/O	103	MEM_DATA20	I/O	155	MEM_READY	I/O	207	RESETN	I
52	VDD	–	104	VDD	–	156	VDD	–	208	VDD	–

■ 570215 [MAIN ASSY (3/12) : IC1104]

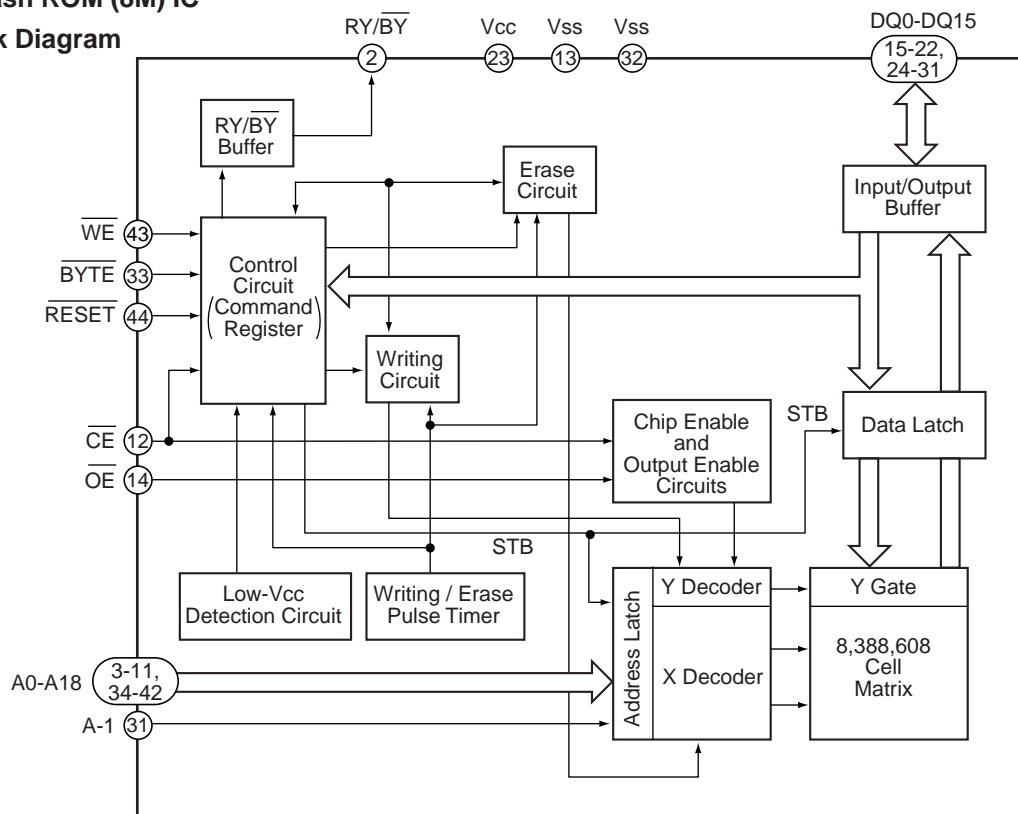
- Sub-CPU (Secure Micro)
- Pin Arrangement



# ■ MBM29F800BA-70PF [MAIN ASSY (4/12) : IC1305, IC1306, IC1307 and IC1308]

• Flash ROM (8M) IC

## • Block Diagram



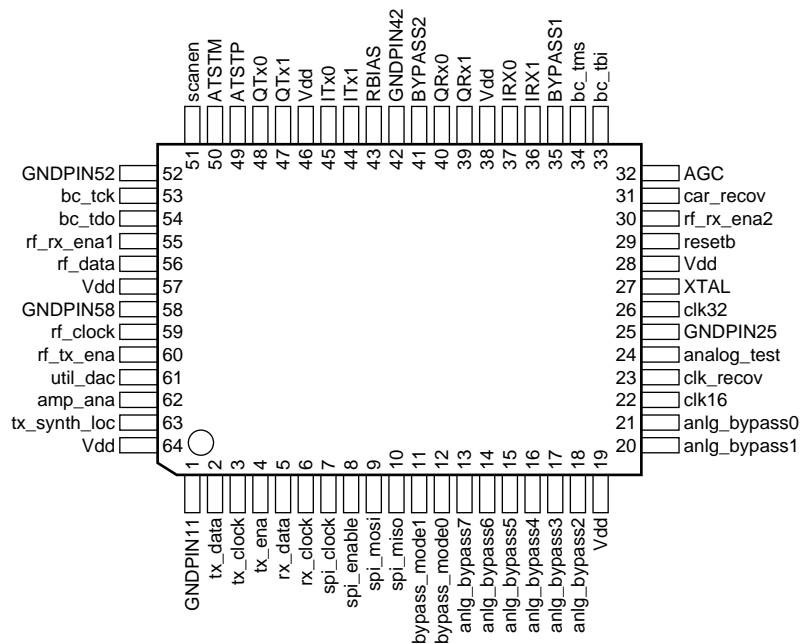
## • Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	RY/ $\overline{\text{BY}}$	Redy/busy output	23	Vcc	Power supply (+5.0V $\pm 10\%$ or $\pm 5\%$ )
2	A18	Address input	24	DQ4	Data input/output
3	A17		25	DQ12	
4	A7		26	DQ5	
5	A6		27	DQ13	
6	A5		28	DQ6	
7	A4		29	DQ14	
8	A3		30	DQ7	
9	A2		31	DQ15/A-1	Data input/output, address input
10	A1		32	Vss	Ground
11	A0		33	BYTE	8 bit or 16 bit switching
12	$\overline{\text{CE}}$	Chip enable	34	A16	Address input
13	Vss	Ground	35	A15	
14	$\overline{\text{OE}}$	Output enable	36	A14	
15	DQ0	Data input/output	37	A13	
16	DQ8		38	A12	
17	DQ1		39	A11	
18	DQ9		40	A10	
19	DQ2		41	A9	
20	DQ10		42	A8	
21	DQ3		43	$\overline{\text{WE}}$	Write enable
22	DQ11		44	$\overline{\text{RESET}}$	Hard ware reset

# SS38122FB21 [MAIN ASSY (6/12) : IC1504]

• BGATE IC

## Pin Arrangement



## Pin Function

No.	Name	I/O	No.	Name	I/O	No.	Name	I/O	No.	Name	I/O
1	GNDPIN1	G	17	anlg_bypass3	I/O	33	bc_tdi	I	49	ATSTP	O
2	tx_data	I	18	anlg_bypass2	I/O	34	bc_tms	I	50	ATSTM	O
3	tx_clock	O	19	Vdd	P	35	BYPASS1	I	51	scanen	I
4	tx_ena	I	20	anlg_bypass1	I/O	36	IRX1	I	52	GNDPIN52	G
5	rx_data	O	21	anlg_bypass0	I/O	37	IRX0	I	53	bc_tck	I
6	rx_clock	I	22	clk16	O	38	Vdd	P	54	bc_tdo	O
7	spi_clock	I	23	clk_recov	O	39	QRx1	I	55	rf_rx_ena1	O
8	spi_enable	I	24	analog_test	I	40	QRx0	I	56	rf_data	O
9	spi_mosi	I	25	GNDPIN25	G	41	BYPASS2	I	57	Vdd	P
10	spi_miso	O	26	clk32	I	42	GNDPIN42	G	58	GNDPIN58	G
11	bypass_mode1	I/O	27	XTAL	O	43	RBIAS	I	59	rf_clock	O
12	bypass_mode0	I/O	28	Vdd	P	44	ITx1	O	60	rf_tx_ena	O
13	anlg_bypass7	I/O	29	resetb	I	45	ITx0	O	61	util_dac	O
14	anlg_bypass6	I/O	30	rf_rx_ena2	O	46	Vdd	P	62	amp_ana	O
15	anlg_bypass5	I/O	31	car_recov	O	47	QTx1	O	63	tx_synth_loc	I/O
16	anlg_bypass4	I/O	32	AGC	O	48	QTx0	O	64	Vdd	P

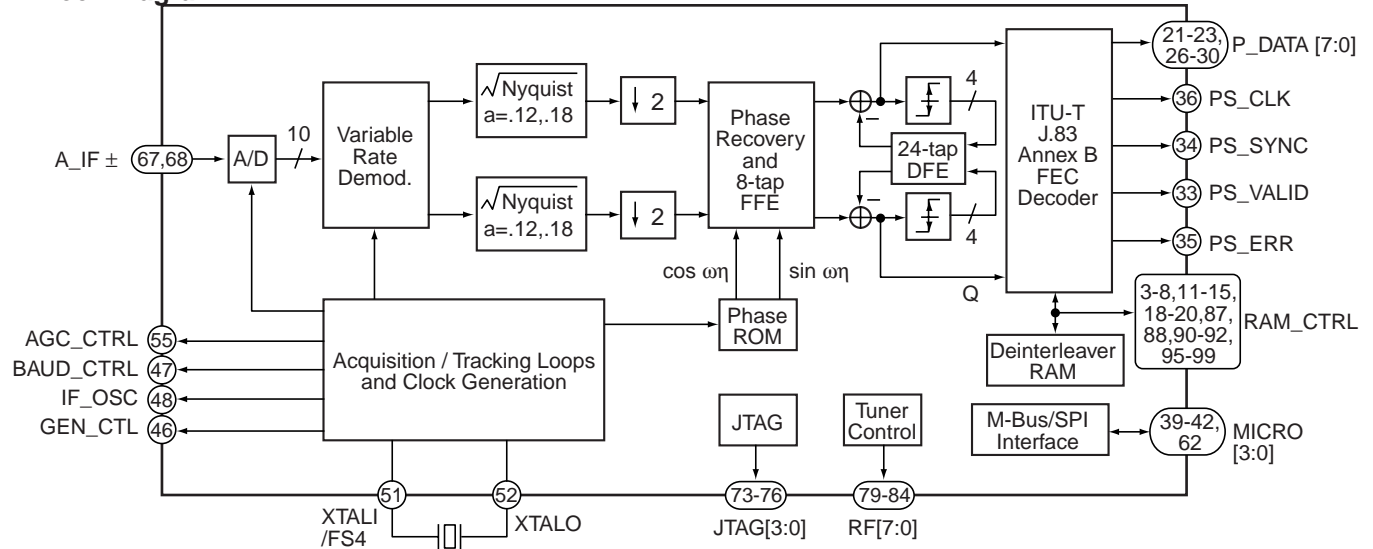
Note :

I = INPUT  
O = OUTPUT  
I/O = BIDIRECTIONAL  
P = Vdd  
G = GND  
NC = No Connection

# ■ BCM3116KPF [MAIN ASSY (6/12) : IC1501]

## • QAM Receiver

## • Block Diagram



## • Pin Function (By Pin Number)

No.	I/O	Pin Name	No.	I/O	Pin Name	No.	I/O	Pin Name	No.	I/O	Pin Name
1	G	GND0	26	I/O	P_DATA[4]	51	XI	XTALI/FS4	76	Tri	TDO
2	V	VDD0	27	I/O	P_DATA[3]	52	XO	XTALO	77	G	GND9
3	I/O	R_ADDR[13]	28	I/O	P_DATA[2]	53	G	GND7	78	V	VDD9
4	I/O	R_ADDR[12]	29	I/O	P_DATA[1]	54	V	VDD7	79	O	RF_DATA[7]
5	I/O	R_ADDR[11]	30	O	P_DATA[0]/S_OUT	55	O	AGC/CTL	80	O	RF_CS[0]
6	I/O	R_ADDR[10]	31	G	GND4	56	I/O	ADCLK	81	O	RF_CS[1]
7	I/O	R_ADDR[9]	32	V	VDD4	57	G	GND8	82	O	RF_AGC_SEL
8	I/O	R_ADDR[8]	33	I/O	PS_VALID	58	V	VDD8	83	O	RF_BYP
9	G	GND1	34	I/O	PS_SYNC	59	OD	IRQ	84	O	RF_CLK
10	V	VDD1	35	I/O	PS_ERR	60	I	RESET	85	G	GND10
11	I/O	R_ADDR[7]	36	I/O	PS_CLK	61	I	TS	86	V	VDD10
12	I/O	R_ADDR[6]	37	G	GND5	62	I	SPI_I2C	87	Tri	R_WE
13	I/O	R_ADDR[5]	38	V	VDD5	63	G	AGND0 (PLL)	88	Tri	R_OE
14	I/O	R_ADDR[4]	39	I/O	SDA/MOSI	64	V	AVDD0 (PLL)	89	V	VIPLVL
15	I/O	R_ADDR[3]	40	I	SCL/SCK	65	V	AVDD1 (A/D)	90	I/O	R_DATA[6]
16	G	GND2	41	I/O	ADDR[1]/MISO	66	G	AGND1 (A/D)	91	I/O	R_DATA[5]
17	V	VDD2	42	I	ADDR[0]/SS	67	A	A_IF+	92	I/O	R_DATA[4]
18	I/O	R_ADDR[2]	43	O	BCLK	68	A	A_IF-	93	G	GND11
19	I/O	R_ADDR[1]	44	G	GND6	69	G	AGND2 (A/D)	94	V	VDD11
20	I/O	R_ADDR[0]	45	V	VDD6	70	V	AVDD2 (A/D)	95	I/O	R_DATA[3]
21	I/O	P_DATA[7]	46	O	GEN_CTL	71	G	AGND3 (A/D)	96	I/O	R_DATA[2]
22	I/O	P_DATA[6]	47	O	BAUD_CTL	72	V	AVDD3 (A/D)	97	I/O	R_DATA[1]
23	I/O	P_DATA[5]	48	O	IF_OSC	73	ID	TCK	98	I/O	R_DATA[0]
24	G	GND3	49	XO	XTALO2	74	IU	TMS	99	I/O	R_ADDR[14]
25	V	VDD3	50	XI	XTALI2	75	IU	TDI	100	I	TBYP

I : Input    O : Output    I/O : Bidirectional    OD : Open drain output  
 Tri : Tri-stateable output    IU : Input with internal pull-up  
 XI : Crystal input    XO : Crystal output

A : Analog  
 ID : Input with internal pull-down

# BD-V1100, BD-V1110

## ● Pin Function (By Function)

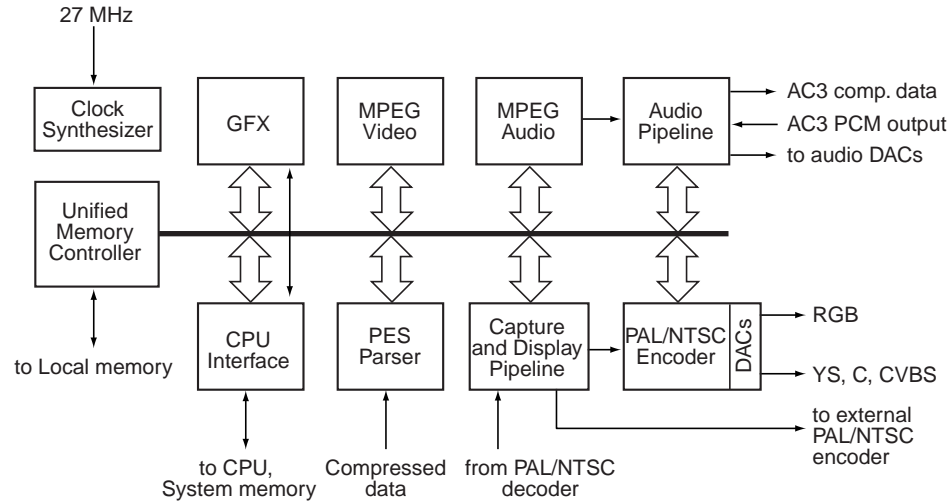
No.	Pin Name	I/O	Function
RECEIVER-19			
67,68	A_IF +/-	A	Receiver analog input (2Vp-p differential)
30	P_DATA[0]/S_OUT	O	Parallel data output (LSB) /Serial data output
21-23,26-28	P_DATA[7]-[1]	I/O	Parallel data output (MSBs)
33	PS_VALID	I/O	Parallel/serial data valid indicator
34	PS_SYNC	I/O	Parallel_serial MPEG-2 sync for packet
35	PS_ERR	I/O	Parallel/serial error signal
36	PS_CLK	I/O	Parallel/serial data packet clock output
56	ADCLK	I/O	Off-chip A/D sample clock/On-chip A/D sample clock
43	BCLK	O	Baud clock
55	AGCI_CTL	O	IF AGC ΔΣ output
47	BAUD_CTL	O	Baud ΔΣ output
46	GEN_CTL	O	General purpose ΔΣ output
MICROCONTROLLER INTERFACE-5			
62	SPI_I2C	I	Microcontroller mode select (M-bus/SPI)
39	SDA/MOSI	I/O	M-bus bidirectional data signal/SPI master out/slave in
40	SCL/SCK	I	M-bus clock/SPI clock
41	ADDR[1]/MISO	I/O	M-bus chip address select/SPI master in/slave out
42	ADDR[0]/SS	I	M-bus chip address select/SPI chip select
RAM CONTROL-25			
87	R_WE	Tri	RAM write enable
88	R_OE	Tri	RAM output enable
90-92,95-98	R_DATA[6]-[0]	I/O	RAM data
99,3-8, 11-15,18-20	R_ADDR[14]-[0]	I/O	RAM address
RF TUNER CONTROL-6			
84	RF_CLK	O	RF tuner serial clock
79	RF_DATA		RF tuner serial data
81,80	RF_CS[1]-[0]		RF tuner PLL enable
82	RF_AGC_SEL		RF tuner QAM/NTSC AGC select
83	RF_BYP		RF tuner bypass control
JTAG SIGNALS-4			
76	TDO	Tri	JTAG test data output
75	TDI	IU	JTAG test data input
74	TMS	IU	JTAG test mode select
73	TCK	ID	JTAG test clock
MISCELLANEOUS SIGNALS-4			
60	RESET	IU	Master reset
59	IRQ	OD	Interrupt output pin
61	TS	I	Test mode select pin
100	TBYP	I	PLL Fs4 clock bypass
VCO I/O PINS-5			
51	XTALI/FS4	XI	Crystal input pin/off chip 4 times sample clock
52	XTALO	XO	Crystal output pin
50	XTALI2	XI	Optional IF crystal input pin
49	XTALO2	XO	Optional IF crystal output pin
48	IF_OSC	O	In-band carrier oscillator output
SUPPLY VOLTAGES-32			
94,86,78,58, 54,45,38,32, 25,17,10,2	VDD[11]-[0]	V	3.3V digital power supply
93,85,77,57, 53,44,37,31, 24,16,9,1	GND[11]-[0]	G	Digital ground
63	AGND[0]	G	PLL analog ground
64	AVDD[0]	V	3.3V PLL analog power supply
72,65,70	AVDD[3]-[1]	V	3.3V A/D converter analog power supply
71,66,69	AGND[3]-[1]	G	A/D converter analog ground
89	VIPLVL	V	Input protection voltage level. (Must be tied to a low impedance 5V supply for 5V tolerant inputs)



# **STI5600ACV [MAIN ASSY (7/12) : IC1603]**

## **• MAC IC**

## **• Block Diagram**



## **• Pin Function (By Pin Number)**

No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name	No.	Pin Name
1	VSI/PSYNC	31	D11	61	R/W	91	A9	121	DD3	151	AA4	181	VREFRGB
2	ACDSTR	32	GND	62	GND	92	A8	122	DD11	152	AA3	182	IREFRGB
3	VCDSTR	33	D10	63	WBE3	93	DD31	123	DD4	153	AA2	183	DVDD
4	CDREQ	34	D9	64	WBE2	94	DD30	124	DD10	154	GND	184	VDDcore
5	BUSREQ	35	D8	65	WBE1	95	DD29	125	DD5	155	AA1	185	CFC
6	BUSACK	36	D7	66	WBE0	96	GND	126	VDD	156	AA0	186	PIXCLK2X
7	D31	37	D6	67	A29	97	DD28	127	DD9	157	PGND	187	VDD
8	D30	38	D5	68	A28	98	DD27	128	DD6	158	PVDD	188	YCO0
9	D29	39	D4	69	VDD	99	DD26	129	DD8	159	SYSCLK	189	YCO1
10	VDD	40	VDD	70	A27	100	DD25	130	DD7	160	USRCLK	190	YCO2
11	D28	41	D3	71	A26	101	DD24	131	GNDcore	161	RESET	191	YCO3
12	D27	42	V2	72	A25	102	VDD	132	LDQM/CAS2	162	AC3REQ	192	YCO4
13	D26	43	D1	73	A24	103	DD23	133	UDQM/CAS3	163	SDAT3	193	YCO5
14	D25	44	D0	74	A23	104	DD22	134	GND	164	AUDCLK2	194	YCO6
15	D24	45	MIRQ	75	A22	105	DD21	135	CLK	165	SCLK2	195	YCO7
16	D23	46	GIRQ	76	A21	106	DD20	136	VDD	166	LRCLK1	196	HSO
17	GND	47	READY	77	A20	107	DD19	137	WE	167	SDAT2	197	VSO
18	D22	48	GND	78	GND	108	GND	138	CAS/CAS0	168	AUDCLK1	198	GND
19	D21	49	CS	79	VDDcore	109	DD18	139	RAS/RAS0	169	SCLK1	199	YCI7/CD7
20	D20	50	SRAS3	80	A19	110	DD17	140	CAS1/RAS1	170	LRCLK1	200	YCI6/CD6
21	D19	51	SRAS2	81	A18	111	DD16	141	CS0/CAS1	171	SDAT1	201	YCI5/CD5
22	D18	52	SRAS1	82	A17	112	DD15	142	GND	172	DGND	202	YCI4/CD4
23	D23	53	SRAS0	83	A16	113	DD0	143	AA11	173	CVBS	203	YCI3/CD3
24	VDD	54	SCAS3	84	A15	114	VDD	144	AA10	174	C	204	YCI2/CD2
25	D16	55	VDD	85	A14	115	DD14	145	AA9	175	Y	205	YCI1/CD1
26	GNDcore	56	SCAS2	86	A13	116	DD1	146	AA8	176	VREF	206	YCI0/CD0
27	D15	57	SCAS1	87	A12	117	DD13	147	AA7	177	IREF	207	LLCLK2X
28	D14	58	SCAS0	88	A11	118	DD2	148	VDD	178	B	208	HSI/PERR
29	D13	59	DRAMWE	89	A10	119	DD12	149	AA6	179	G		
30	D12	60	DRAMOE	90	VDD	120	GND	150	AA5	180	R		

## ● Pin Function (By Function)

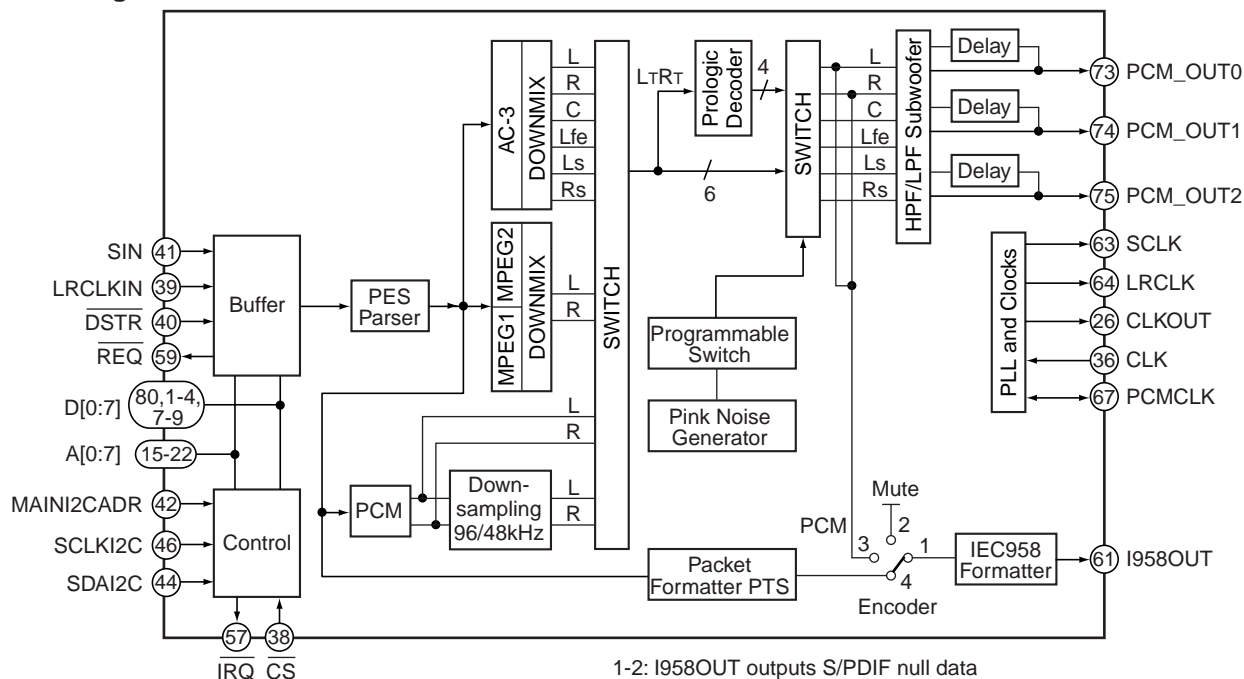
No.	Pin Name	I/O	Function		
Power/Ground and System Services (35)					
10,24,40,55,69,79,90,102,114,126,136,148,184,187	VDD	S	Power supply		
17,26,32,48,62,78,96,108,120,131,134,142,154,198	GND	S	Ground		
158	PVDD	S	PLL power supply		
157	PGND	S	PLL ground		
183	DVDD	S	Video DAC power supply		
172	DGND	S	Video DAC ground		
161	RESET	I	Hard reset		
159	SYSCLK	I	CPU clock		
160	USRCLK	I/O	User clock (e.g. AC3 decoder clock)		
Digitized Video/Compressed Data Interface (14)					
			Compressed Data	Digitized Video	
199-206	CD[7]-[0]	I	Compressed data bus	YCI[7]-[0]	I Digitized multiplexed video input
207	—	—	n/a	LLCLK2X	I Line-locked 2x pixel clock
208	PERR	I	Packet error flag	HSI	I Horizontal sync input
1	PSYNC	I	PES start code flag	VSI	I Vertical sync input
2	ACDSTR	I	Audio compressed data strobe	—	— n/a
3	VCDSTR	I	Video compressed data strobe	—	— n/a
4	CDREQ	O	Compressed data request	—	— n/a
CPU Interface (75)					
44-41,39-33,31-27,25,23-18,16-11,9-7	D[0]-[31]	I/O	System data bus		
92,91,89-80,77-70,68,67	A[8]-[29]	I/O	System address bus		
49	CS	I	Chip select		
61	R/W	I	Read/write indicator		
47	READY	O	Ready indicator		
45	MIRQ	OD	MPEG interrupt request		
46	GIRQ	OD	GFX interrupt request		
66-63	WBE[0]-[3]	I	Write byte enable		
58-56,54	SCAS[0]-[3]	O	System DRAM column address select		
53-50	SRAS[0]-[3]	O	System DRAM row address select		
5	BUSREQ	O	System bus request		
6	BUSACK	I	System bus acknowledge		
60	DRAMOE	O	System DRAM output enable		
59	DRAMWE	O	System DRAM write enable		
Local Memory Interface (52)					
			Extended Data Out DRAM	Synchronous DRAM	
143-147,149-153,155,156	AA[11]-[0]	O	Local DRAM address bus	AA[11]-[0]	O Local DRAM address bus
112,115,117,119,122,124,127,129,130,128,125,123,121,118,116,113	DD[15]-[0]	I/O	Local DRAM data bus	DD[15]-[0]	I/O Local DRAM data bus
93-95,97-101,103-107,109-111	DD[31]-[16]	I/O	Local DRAM data bus	—	— n/a
133	CAS3	O	Column address strobe for byte 3	UDQM	O Upper byte data mask

No.	Pin Name	I/O	Function			
			Extended Data Out DRAM		Synchronous DRAM	
132	$\overline{\text{CAS2}}$	O	Column address strobe for byte 2	$\overline{\text{LDQM}}$	O	Lower byte data mask
141	$\overline{\text{CAS1}}$	O	Column address strobe for byte 1	$\overline{\text{CS0}}$	O	Chip select for first bank
138	$\overline{\text{CAS0}}$	O	Column address strobe for byte 0	$\overline{\text{CAS}}$	O	Column address strobe
140	$\overline{\text{RAS1}}$	O	Row address strobe for second bank	$\overline{\text{CS1}}$	O	Chip select for second bank
139	$\overline{\text{RAS0}}$	O	Row address strobe for first bank	$\overline{\text{RAS}}$	O	Row address strobe
137	$\overline{\text{WE}}$	O	write enable	$\overline{\text{WE}}$	O	Write enable
135	————	–	n/a	CLK	O	Local SDRAM clock
Video Output Interface (22)						
180-178	R,G,B	O	Analog RGB video			
175,174	Y,C	O	Analog S video			
173	CVBS	O	Analog composite video			
182	IREFRGB	I	Reference current for RGB DAC			
181	VREFRGB	I	Reference voltage for RGB DAC			
177	IREF	I	Reference current for Y, C, CVBS DAC			
176	VREF	I	Reference voltage for Y, C, CVBS DAC			
186	PIXCLK2X	I/O	2x pixel clock			
195-188	YCO[7]-[0]	I/O	Digital multiplexed video output			
196	HSO	O	Horizontal sync for external DENC			
197	VSO	O	Vertical sync for external DENC			
185	CFC	I	Chroma frequency control			
Audio/AC3 compressed data Interface (10)						
			no external AC3 decoder		external AC3 decoder	
168	AUDCLK1	I/O	PCM oversampling clock	AUDCLK1	I/O	PCM oversampling clock
169	SCLK1	I/O	PCM bit clock	SCLK1	I/O	PCM bit clock
170	LRCK1	I/O	PCM left/right clock	LRCK1	I/O	PCM left/right clock
171	SDAT1	O	PCM serial data to first DAC	SDAT1	O	PCM serial data to first DAC
164	AUDCLK2	I/O	PCM oversampling clock	AUDCLK2	I/O	PCM oversampling clock
165	SCLK2	O	PCM bit clock	SCLK2	O	PCM bit clock
166	LRCK2	O	PCM left/right clock	LRCK2	O	AC3 compressed data bit clock
167	SDAT2	O	PCM serial data to second DAC	SDAT2	O	Word select
163	————	–	n/a	SDAT3	I	AC3 serial compressed data to AC3 decoder
162	————	–	n/a	$\overline{\text{AC3REQ}}$	I	Compressed data request from AC3 decoder

# **STI4600ACV [MAIN ASSY (8/12) : IC1701]**

## • AC-3 Decoder IC

## • Block Diagram



## • Pin Function

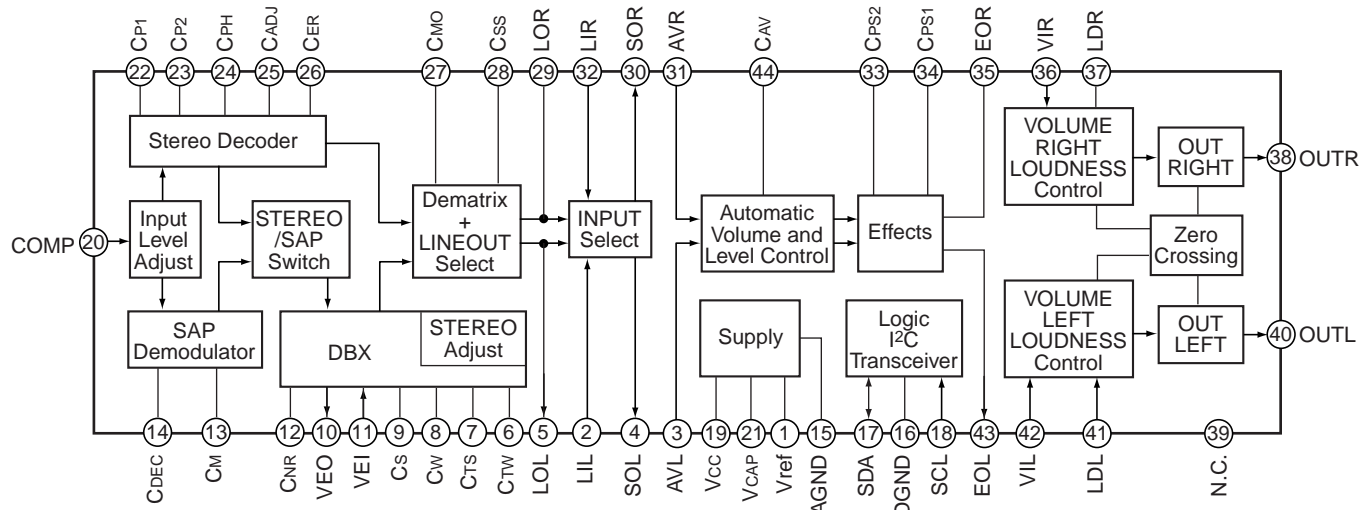
No.	Pin Name	I/O	Function
<b>CONTROL INTERFACES</b>			
57	IRQ	O(1)	Interrupt signal (level), active low
45	SELI2C	I(2)	Selects the control interface (when high : serial interface, when low : parallel interface)
<b>I<sup>2</sup>C CONTROL INTERFACE</b>			
44	SDAI2C	I/O(1)	I <sup>2</sup> C serial data
46	SCLKI2C	I	I <sup>2</sup> C clock
42	MAINI2CADDR	I(2)	Determines the slave address
<b>PARALLEL CONTROL INTERFACE</b>			
80,1-4,7-9	D0-D7	I/O	Host data
15-22	A0-A7	I	Host address
38	CS	I	Chip select, active low
23	R/W	I	Read/write selection : read access when high, write access when low
37	WAIT	O(3)	Data acknowledge, active low
<b>DATA INPUT INTERFACE</b>			
<b>SERIAL DATA INTERFACE</b>			
40	DSTR	I	Clock input data, active low
41	SIN	I	Serial input data
39	LRCKIN	I	Word clock for the input
59	REQ	O	Handshake for the data transfer, active low
<b>DATA OUTPUT INTERFACE</b>			
67	PCMCLK	I/O	PCM clock input or PLL DAC output

No.	Pin Name	I/O	Function
DAC INTERFACE			
63	SCLK	O	Bit clock for the DAC
64	LRCLK		Word clock for the DAC
73	PCM_OUT0		Data for the first DAC (left/right)
74	PCM_OUT1		Data for the second DAC (centre/sub)
75	PCM_OUT2		Data for the third DAC (leftsur/rightsur)
IEC958 INTERFACE (S/PDIF)			
61	I958OUT	O	S/PDIF signal
STATUS INFORMATION			
PCM RELATED INFORMATION			
58	SFREQ	O	When high, indicates that the sampling frequency is either 44.1kHz or 22.05kHz (*). When low, indicates that the sampling frequency is either 32kHz, 48kHz, 96kHz, 24kHz (*) or 16kHz (*). (*) : Frequencies available for chips in software versions 4 or later only.)
60	DEEMPH	O	Indicates if de-emphasis is performed
AUDIO VIDEO SYNCHRONIZATION			
62	PTS	O	Indicates that a PTS has been detected, active low.
OTHER SIGNALS			
36	CLK	I	Master clock input signal (27MHz)
43	RESET	I(2)	Reset signal input, active low
49	TEST	I(2)	Reserved pin : to be connected to VDD
52	SMODE	I	Reserved pin : to be connected to GND
PIN INTERFACES			
26	CLKOUT	O	System clock output
68	VDADAC	VDD	Analog DAC PLL supply voltage
69	VCDAC	I	DAC PLL filter
70	VSADAC	GND	Analog DAC PLL ground
31	VDASYS	VDD	Analog system supply
32	VCSYS	I	System PLL filter
33	VSASYS	GND	Analog system ground
5,11,12,24, 27,30,35, 47,50,53, 55,65,71, 76,79	GND	GND	Ground
6,10,13,25, 28,29,34, 48,51,54, 56,66,72, 77,78	VDD	VDD	Power supply
14	NC	NC	Reserved pin : to be connected GND

# TDA9852H [MAIN ASSY (9/12) : IC1801]

• BTSC Decoder IC

## Block Diagram



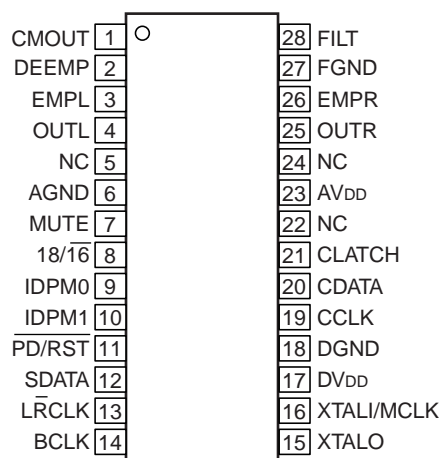
## Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	Vref	Reference voltage 0.5Vcc	23	CP2	Capacitor for pilot detector
2	LIL	Input line control, left channel	24	CPH	Capacitor for phase detector
3	AVL	Input automatic volume control, left channel	25	CADJ	Capacitor for filter adjustment
4	SOL	Output selector, left channel	26	CER	Ceramic resonator
5	LOL	Output line control, left channel	27	CMO	Capacitor DC-decoupling mono
6	CTW	Capacitor timing wideband for dbx	28	CSS	Capacitor DC-decoupling stereo/SAP
7	CTS	Capacitor timing spectral for dbx	29	LOR	Output line control, right channel
8	CW	Capacitor wideband for dbx	30	SOR	Output selector, right channel
9	Cs	Capacitor spectral for dbx	31	AVR	Input automatic volume control, right channel
10	VEO	Variable emphasis output for dbx	32	LIR	Input line control, right channel
11	VEI	Variable emphasis input for dbx	33	CPS2	Capacitor 2 pseudo function
12	CNR	Capacitor noise reduction for dbx	34	CPS1	Capacitor 1 pseudo function
13	CM	Capacitor mute for SAP	35	EOR	Output effects, right channel
14	CDEC	Capacitor DC-decoupling for SAP	36	VIR	Input volume, right channel
15	AGND	Analog ground	37	LDR	Input loudness, right channel
16	DGND	Digital ground	38	OUTR	Output, right channel
17	SDA	Serial data input/output (I2C-bus)	39	n.c.	Not connected
18	SCL	Serial clock input (I2C-bus)	40	OUTL	Output, left channel
19	VCC	Supply voltage	41	LDL	Input loudness, left channel
20	COMP	Composite input signal	42	VIL	Input volume, left channel
21	VCAP	Capacitor for electronic filtering of supply	43	EOL	Output effects, left channel
22	CP1	Capacitor for pilot detector	44	CAV	Automatic volume control capacitor

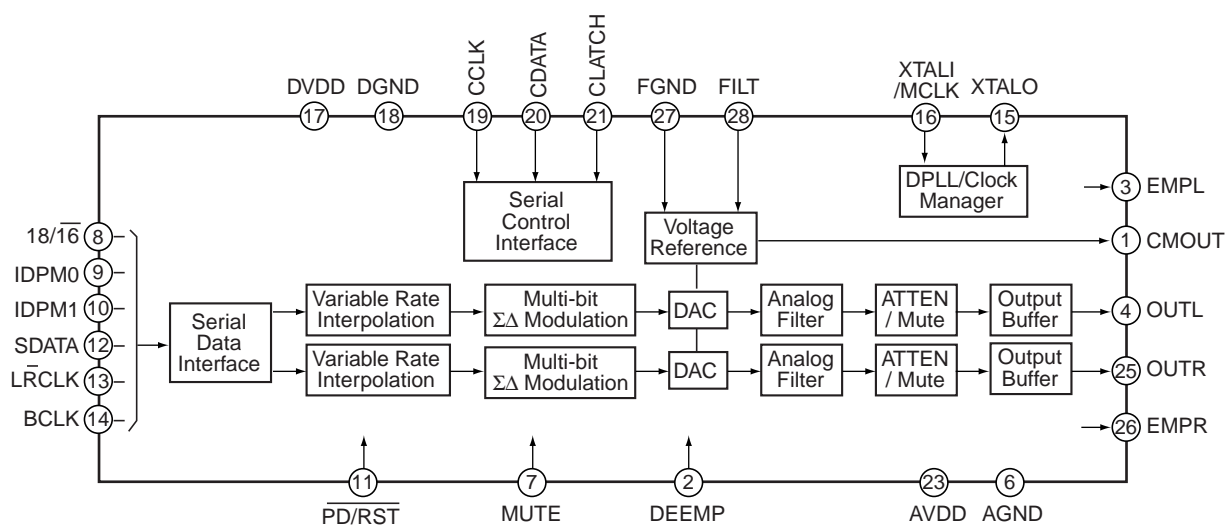
# **AD1859JRS [MAIN ASSY (9/12) : IC1802]**

• Audio DAC IC

## • Pin Arrangement

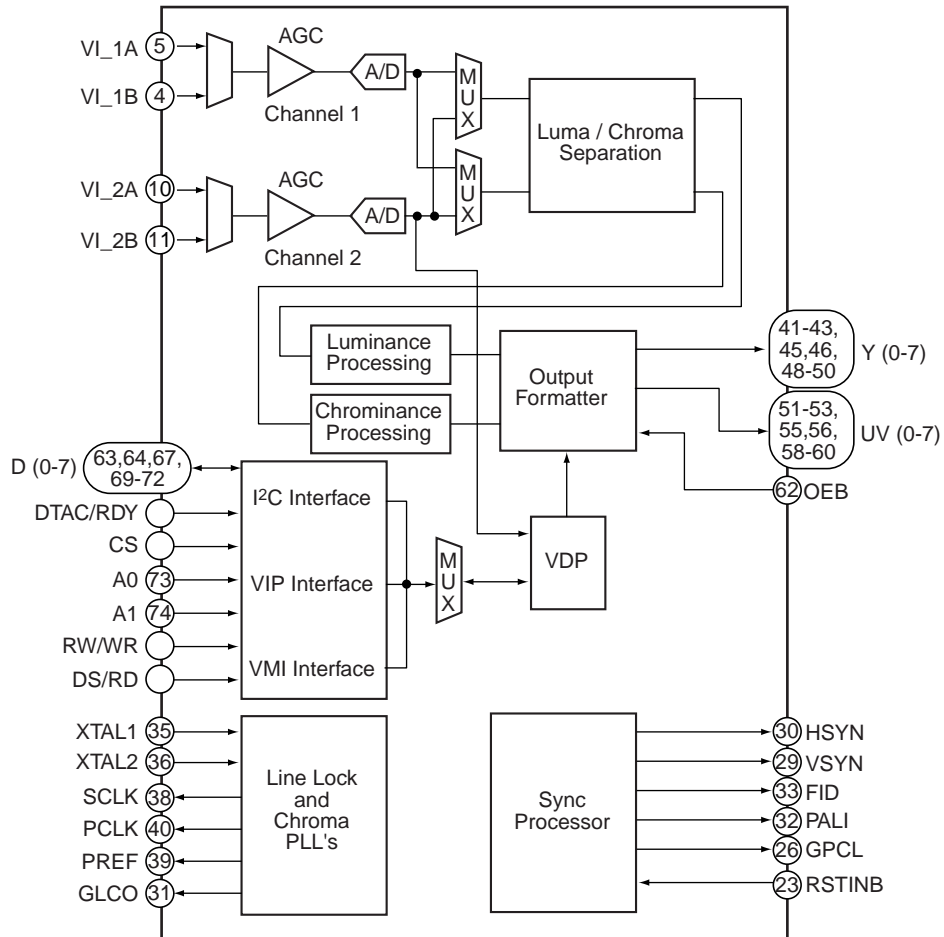


## • Block Diagram



## ■ TVP5020CPFP [MAIN ASSY (10/12) : IC2202]

- Video Decoder IC
- Block Diagram





## ● Pin Function

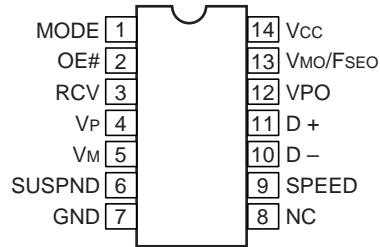
No.	Pin Name	I/O	Function
<b>Analog Video</b>			
5 4 10 11	VI_1A VI_1B VI_2A VI_2B	I	Analog video inputs. Up to four composite inputs or two s-video inputs or a combination of the two. The inputs must be AC coupled. The recommended coupling capacitor is 0.1μF.
<b>Clock Signals</b>			
40	PCLK	O	Pixel clock output. The frequency is 12.2727MHz for square-pixel NTSC, 14.75MHz for square-pixel PAL and 13.5MHz for ITU-R BT.601 sampling modes.
39	PREF	O	Clock phase reference signal. This signal qualifies clock edges when SCLK is used to clock data that is changing at the pixel clock rate.
38	SCLK	O	System clock output with twice the frequency of the pixel clock (PCLK).
35 36	XTAL1 XTAL2	I	External clock reference, The user may connect XTAL1 to a TTL-compatible oscillator or to one terminal of a crystal oscillator. The user may connect XTAL2 to the other terminal of the crystal oscillator or not connect XTAL2 at all. Square pixel sampling uses an oscillator frequency of 26.800MHz. ITU-RBT.601 sampling uses an oscillator frequency of 24.576MHz.
<b>Digital Video</b>			
61	EXT_DATA_8	I	Data port-bit [8]
51,52,53, 55,56,58, 59,60	UV[0]-[7]	I/O	8-bit digital chrominance outputs. These terminals may be placed in a high-impedance state under host port control. These terminals may also be configured to output data from the channel 2 A/D converter. The function of these terminals is controlled via the host port-bus. A vendor modifiable subsystem ID may be configured by configuring the UV[7]-[0] terminals with pull-up/pull-down resistors.
41,42,43, 45,46,48, 49,50	Y[0]-[7]	O	8-bit digital luminance outputs or 8-bit multiplexed luminance and chrominance outputs. These terminals may be placed in a high-impedance state under host port control. These terminals may also be configured to output data from the channel 1 A/D converter.
<b>HOST PORT-bus</b>		<b>VMI</b>	<b>I2C</b>
73	A0	I	VMI address port
74	A1	I	VMI address port
72-69,67, 66,64,63	D[0]-[7]	I/O	VMI data port-bit[7]-[0]
80	INTREQ	O(OD)	Interrupt request (INTREQ)
79	VC0	I/O (OD)	VMI port data ack or ready signal (DTACK)
76	VC3	I	VMI port chip select. (VC)
77	VC2	I/O (OD)	VMI port data strobe or read signal (DS/RD)
78	VC1	I/O	VMI port read-write or write (RW/WR)
<b>Miscellaneous Signals</b>			
26	GPCL	I/O	General purpose control logic. This terminal has three functions : 1. General purpose output. In this mode state of GPCL is directly programmed via host port. 2. Vertical blank output. In this mode the GPCL terminal is used to indicate the vertical blanking interval of the output video. The beginning and end times of this signal are programmable via host port control. 3. Sync lock control input. In this mode when GPCL is high the output clocks and horizontal line count are forced to nominal values.
31	GLCO	I/O	This serial output carries the internal horizontal PLL the color subcarrier PLL phase information and NTSC/PAL field sequence information. A slave device can decode the information to allow genlocking to the TVP5010. Data is transmitted at the SCLK rate. Additionally, this terminal in conjunction with PALI and FID is used to determine the host port mode configuration during initial power up.
62	OEB	I	Output enable, active low : or data input for 9 or 10-bit external A/D. When this terminal is an output enable a logic 1 input forces Y and UV output terminals to high impedance states.
28	PLL_BYP	–	Connected to ground side of capacitor between this terminal and PLL_AVDD.
23	RSTINB	I	Reset input, active low. A low input initiates the reset sequence
1,2,13-15	No Connect	–	Not connected

No.	Pin Name	I/O	Function
<b>Power Supplies</b>			
16	AFE_GND	–	Analog supply. Connect to analog ground
18	AFE_VDD	–	Analog supply. Connect to 5V analog.
3 12	CH1_AGND CH2_AGND	–	Analog grounds. Connect to analog ground
6 9	CH1_AVDD CH2_AVDD	–	Analog supply. Connect to 5V analog.
21,22,24, 37,47,57, 68	DGND	–	Digital grounds
20	DTO_AGND	–	Ground for DTO. Connect to analog ground.
19	DTO_AVDD	–	Supply for DTO. Connect to 5V analog.
34,44,54, 65,75	DVDD	–	Digital supply 3.3V
17	NSUB	–	Substrate ground. Connect to analog ground.
25	PLL_AVDD	–	PLL supply connect to 3.3V
8	REFP	–	A/D reference supply. Connect to 5V analog.
7	REFM	–	A/D reference ground. Connect to analog ground.
<b>Sync Signals</b>			
27	AVID	O	Active video indicator. This signal is high during the horizontal active time of the video output on the Y and UV terminals. AVID continues to toggle during vertical blanking intervals. This terminal may be placed in a high-impedance state.
33	FID	I/O	Odd/even field indicator or vertical lock indicator. For odd/even indicator a logic 1 indicates the odd field. For vertical lock indicator a logic 1 indicates the internal vertical processor is in locked state. Additionally, this terminal in conjunction with GLCO and PALI is used to determine the host port mode configuration during initial power up.
30	HSYN	O	Horizontal sync signal. The rising edge time is programmable via host port control this terminal may be placed in a high-impedance state under host port control.
32	PALI	I/O	PAL line indicator or horizontal lock indicator. For PAL line indicator a logic 1 indicates a noninverted line and a logic 0 indicates an inverted line. For horizontal lock indicator a logic 1 indicates the internal horizontal PLL is in a locked state. Additionally, this terminal in conjunction with GLCO and FID is used to determine the host port mode configuration during initial power up.
29	VSYN	O	Vertical sync or vertical blanking signal. The function of this terminal is selected via host port control. This terminal may be placed in a high-impedance state.

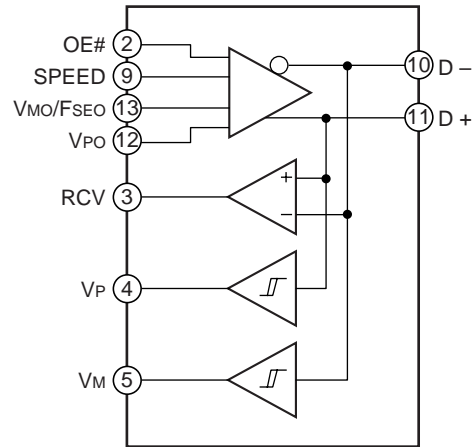
## ■ PDIUSBP11APW [MAIN ASSY (12/12) : IC1201]

### • USB Driver IC

#### • Pin Arrangement



#### • Block Diagram



#### • Pin Function

No.	Pin Name	I/O	Function
1	MODE	I	Mode. When left unconnected a weak pull-up transistor pulls it to VCC and in this mode, the PDIUSBP11APW is backward compatible to PDIUSBP11APW. When connected to ground the VMO/FSEO pin takes the function of FSEO (force SEO)
2	OE#	I	Output enable. Active low, enables the transceiver to transmit data on the bus. When not active the transceiver is in receive mode.
3	RCV	O	Receive data. CMOS level output for USB differential input.
4	VP	O	Gated version of D- and D+. Outputs are logic "0" and logic "1". Used to detect single ended zero (SE0#), error conditions and interconnect speed. (Inputs to SIE)
5	VM		
6	SUSPND	I	Suspend. Enables a low power state while the USB bus is inactive. While the SUSPND pin is active it will drive the RCV pin to a logic "0" state. Both D+ and D- are tri-stated.
7	GND	–	Ground reference
8	NC	–	Not used
9	SPEED	I	Edge rate control. Logic "1" operates at edge rates for "full speed". Logic "0" operates edge rates for "low speed".
10	D+	AI/O	Data+, Data-. Differential data bus conforming to the Universal Serial Bus standard.
11	D-		
12	VPO	I	Inputs to differential drive. (Outputs from SIE).
13	VMO/FSEO		
14	Vcc	–	3.0V to 3.6V power supply

7.3 DISTINCTION BETWEEN /KU, /KUXJ, /KUXJ/1 AND /KU/1 MODELS OF BD-V1100

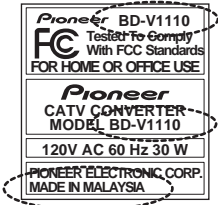
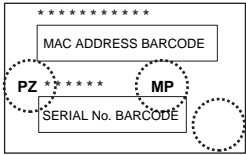
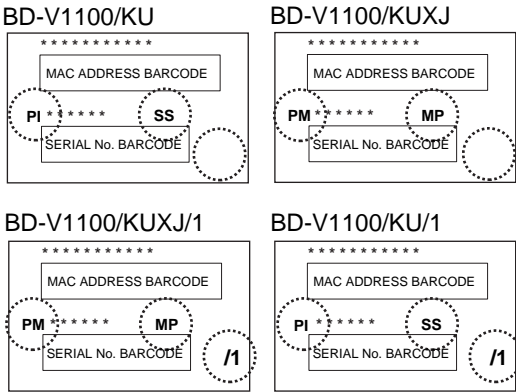
The exterior distinction between /KU, /KUXJ, /KUXJ/1 and /KU/1 models of BD-V1100 are the following table and figure.

Models	Name Plate Marking	Barcode Label Marking
BD-V1100 /KU	" MADE IN JAPAN "	Serial No. left side " PI ", right side " SS "
BD-V1100 /KUXJ	" MADE IN MALAYSIA "	Serial No. left side " PM ", right side " MP "
BD-V1100 /KUXJ/1	" MADE IN MALAYSIA "	Serial No. left side " PM ", right side " MP ", right down side " /1 "
BD-V1100 /KU/1	" MADE IN JAPAN "	Serial No. left side " PI ", right side " SS ", right down side " /1 "

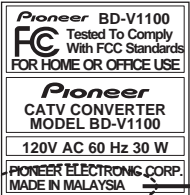
Models	Service Manual Order No.
BD-V1100 /KU	ARP3062
BD-V1100 /KUXJ	ARP3070
BD-V1100 /KUXJ/1	This manual
BD-V1100 /KU/1	This manual

[REFERENCE]  
BD-V1110/KUXJ

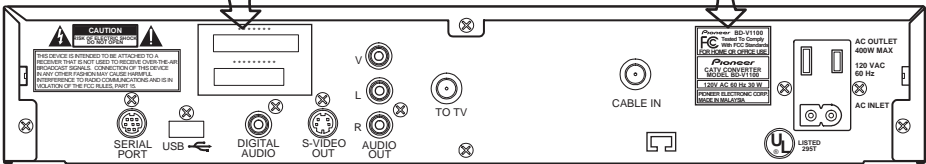
BARCODE LABEL



NAME PLATE



- MADE IN JAPAN : BD-V1100/KU
- MADE IN MALAYSIA : BD-V1100/KUXJ
- MADE IN MALAYSIA : BD-V1100/KUXJ/1
- MADE IN JAPAN : BD-V1100/KU/1

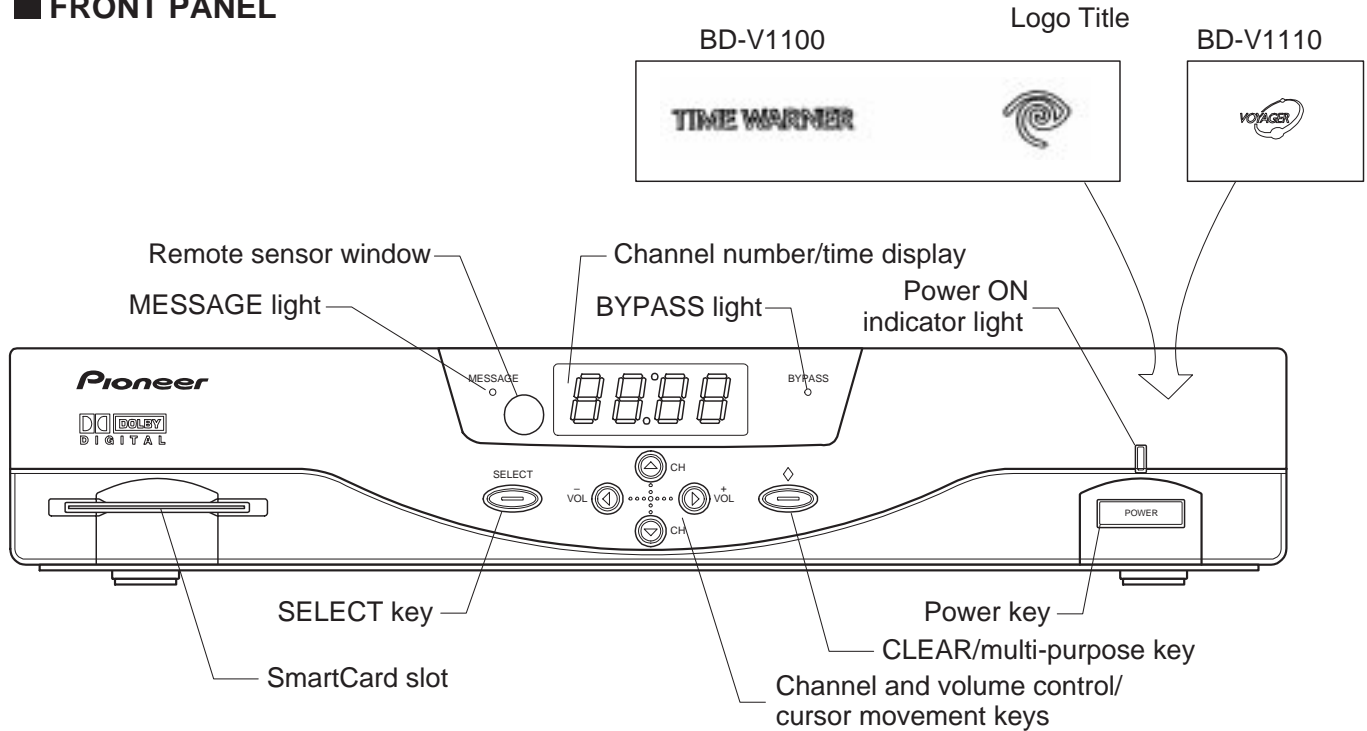


[ Rear Panel side ]

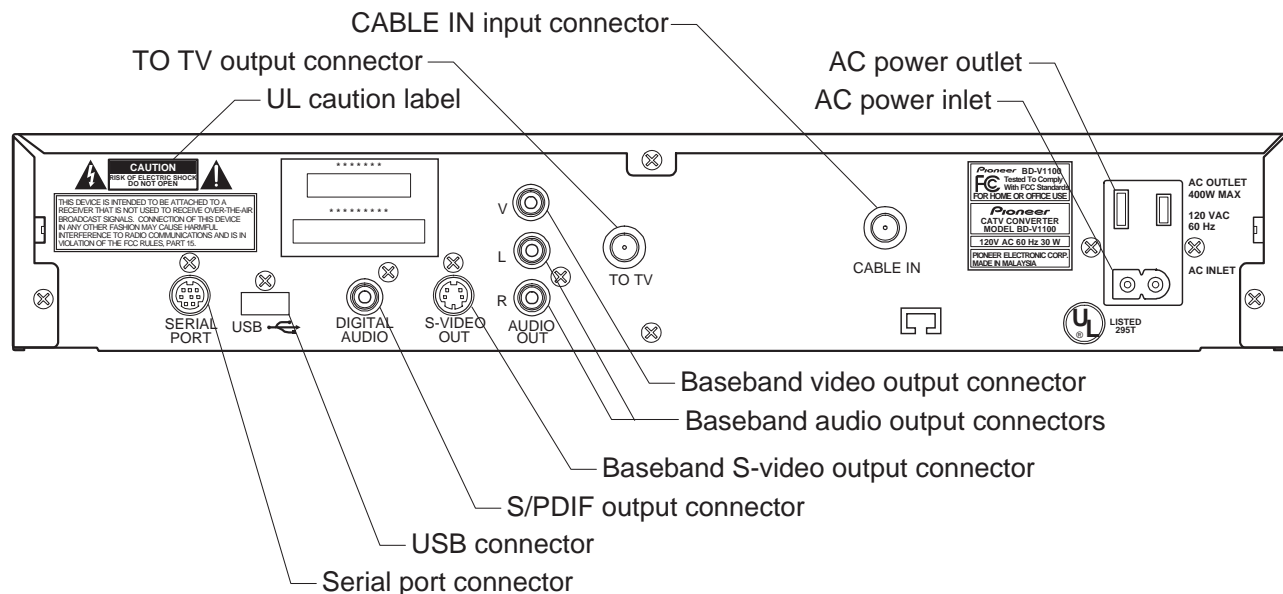
## 8. PANEL FACILITIES AND SPECIFICATIONS

### 8.1 PANEL FACILITIES

#### ■ FRONT PANEL



#### ■ REAR PANEL



## 8.2 SPECIFICATIONS

### RF

Receive Frequency .....	54 to 856MHz
Output Channel .....	3/4 CH
Output Level at 'TO TV' .....	11dBmV +2/-3dB
Frequency Stability at 'TO TV' .....	+/-150KHz max.
Output Return Loss at 'TO TV' .....	12dB min.
Input Return Loss at 'CABLE IN' .....	6dB min.
Spurious Signal at 'CABLE IN' .....	-30dBmV max..(50~856MHz)
Spurious Signal at 'TO TV' .....	-15dBmV max..(50~220MHz)
Local Oscillator Level at 'CABLE IN' .....	-10dBmV max.
Talk Back .....	-34 dB max.
Modulation Technic (Digital Input)	
.....	ITU-T J.83 Annex B 64QAM and 256 QAM
64QAM Input Level (Digital Input) .....	-15 to +14 dBmV
256QAM Input Level (Digital Input) .....	-9 to +14 dBmV

### Analog BaseBand Video

Video S/N .....	40dB min.
Response Flatness .....	2dBp-p max.
Chroma Delay .....	-50ns ± 100nsec

### Digital BaseBand Video

Video S/N .....	50dB min.
Differential Gain .....	10% max.
Differential Phase .....	5deg max.
Response Flatness .....	2dBp-p max.
Chroma Delay .....	-50ns ± 100nsec
Non-linearity .....	+/-5% max.

### Analog BaseBand Audio

Audio S/N .....	45dB min.
-----------------	-----------

### Digital BaseBand Audio

Audio S/N .....	72dB min.
Stereo Channel Separation .....	60dB min.
Frequency Response .....	+/-1.0dB max.

### Data communication

QPSK Output Frequency (Up stream) .....	8 to 26.5MHz
QPSK Output level (Up stream) .....	+55 dBmV min.
QPSK Input Frequency (Down stream) .....	70~130MHz
QPSK Input Level (Down stream) .....	-16 to +15 dBmV
Smart Card .....	ISO7816
Digital Audio .....	IEC958
Serial Port .....	UART
USB .....	V1.0

### General

Safety Requirement .....	UL Approved (UL1409)
AC Input .....	AC120V/60Hz
Power Consumption .....	30W
Dimension .....	380 (W) × 303 (D) × 68 (H) mm
Weight .....	4Kg (Without Package)

**Note** :Specification and the desine is subject to possible modification without notice due to improvement.